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**The Diversity of Agriculture in Former Soviet and Western
Balkan Countries**

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Executive summary

This report gives an overview of agriculture in the selected countries over the last two decades in the following regions:

- Western Balkans (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, the Former Yugoslav Republic of Macedonia).
- Western CIS (Belarus, Moldova, Ukraine).
- CIS Transcaucasia (Armenia, Azerbaijan, Georgia).

Agriculture in these countries has been examined and compared from a variety of perspectives and from this a comprehensive picture has been drawn.

In terms of agricultural resources the Western CIS region plays the most dominant role. From the twelve selected countries Ukraine has the biggest potential in terms of both agricultural land and labour. The share of arable land has an important influence on the structure of agriculture in these countries; the share is highest in the Western CIS countries and lowest in CIS Transcaucasia. The size of agricultural employment (both in absolute and relative terms) gives an overview not only of the efficiency of agriculture but also provides a good description of the developmental state of the economy as a whole. In this respect a decrease was observable in the Western CIS countries during the last decade, while in the two other regions there was no significant change.

Agricultural performance also provides a good overview of the situation of the selected economies. The share of agriculture as a proportion of total GDP is one of the best indicators for measuring the importance of this sector in these countries. For example, we can say that the Albanian economy depends most heavily on agriculture, while Croatia and Azerbaijan have the smallest proportion of GDP derived from agriculture. The value of agricultural output, measured in international dollars, showed fluctuations in every country based on the changes in the output of cereal, meat and milk production.

Agricultural trade also plays a considerable role in these countries. This tendency is well indicated by the fact that the nominal value of both exports and imports increased in every selected country. Important agricultural exporters also usually play very active roles in importing but some countries with fewer exports are also big agricultural importers. In the trade balances a clear tendency can be observed: the Western CIS region is a net exporter with a continuously increasing surplus while the Western Balkans and CIS Transcaucasia are net importers of agricultural goods with a continuously growing deficit.

Price development shows the tendencies that influence the income level of the producers as well as the market prices that the consumers meet. Fluctuation in prices was observable everywhere and for almost every type of product. Analyzing the causes of price fluctuations is not in the remit of this report. However, there are some statements to be made regarding these tendencies. Besides fluctuation there are countries in which the price of certain kinds of products were relatively high all the time (e.g., meat products in Albania) and there are countries in which the price of all types of products was relatively high at the beginning of the 1990s but showed a general tendency to decrease (e.g., in Georgia). The most commonly produced cereals in all the countries were the wheat, maize and barley, while pork, beef and cow's milk were also important products everywhere.

The review of farm structure and size is essential for understanding the effects of transition, at both sector and farm levels. All the countries went through the difficult process of disintegration of the former political and economic system during the 1990s (collapse of the former Yugoslavia and Soviet Union), and the structure of agriculture has also changed significantly in these countries. In the CIS countries the structure is totally different from that of the Western Balkan countries. Due to the high land reform index and privatisation in the Western Balkan countries, individual farms dominate agriculture. CIS Transcaucasia can also be characterised by the overwhelming dominance of private farms and households. On the other hand, in the Western CIS countries – especially in Ukraine and Belarus – corporate farms are the most important players on the agricultural market, though private farms and household plots have quite high shares in the fruit and vegetable sector. Farm efficiency is closely linked to the size of the agricultural land that has been cultivated. Average farm size is highest in the Western CIS while it is smallest in the Western Balkans.

Analysis of rural areas in terms of demographic and economic impacts is also critical to understanding the tendencies in the agricultural sector. The generally cited phenomenon of decreasing rural, and increasing urban populations cannot be proved for all of these countries as the annual rate of urbanisation is negative in some of them (e.g., Armenia, Georgia, Moldova and Montenegro). Moreover, the majority of the population is classified as rural (above 50%) in numerous countries (e.g., Albania, Bosnia and Herzegovina, and Moldova). In CIS Transcaucasia the proportion of the population living below the poverty line was even higher in the urban areas. In general, poverty is a bigger problem in the CIS countries than it is in the Western Balkans. Moreover, the real losers of the market transformation process can be found in rural areas.

Regarding land reform, Western Balkan countries have followed the familiar method of land reform, with no limit on private ownership, using the same allocation method and allowing both buying and leasing of land. The dominance of individual farms in line with agricultural enterprises results in the dual production system. The process was very similar in CIS Transcaucasia, although there, agricultural policy should deal with the fragmented land structure. The situation is more complex in the Western CIS where land reform has not yet been completed and so is still a priority issue.

As in developed countries the support system also plays an important role in the selected countries. In general, the share of agricultural support coming from GDP is on average higher than in every country of the EU-27.

Nowadays food policy and security issues are two of the key components of agricultural policies. If we take into consideration that in these countries the share of a typical household's budget that is spent on food and beverages is very high, and that the proportion of self-sufficiency is quite low, it is an even a more important issue. Regarding food safety, an overview of trade connections is crucial: the most important partners of these regions are the EU and Russia.

Education and human capital are the final issues examined by this report. The common characteristic of both Western Balkan and CIS countries is the “large-scale” oriented style of education. Not enough time has passed since the transition for the education systems to be able to meet the new challenges.

Foreword

The aim of this report is to give a comprehensive picture of the effects of transition on agriculture in the 12 selected countries. The countries are (in alphabetic order): Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina (BiH), Croatia, Georgia, Moldova, Montenegro, Serbia, the Former Yugoslav Republic of Macedonia (FYROM) and Ukraine.

The collapse of the Soviet regime caused dramatic changes in Eastern Bloc countries. This is especially true in the agricultural sector. For example, CIS countries have been faced with a 50% plus decline in agricultural output, which has resulted in a growing agricultural trade deficit. The basic ideas that underpin the future plans of these countries vary greatly. In the Western Balkans the key issue is undoubtedly accession to the EU as early as possible, although this seems like a long process for most of them. In the former Soviet countries in Europe (Western CIS) the transition process has not yet been fully finished, so they seem to be concentrating on modernisation. In the Caucasian countries resource management could be the most important area of further development. Although accession to the EU cannot be envisaged in the near future for the selected CIS countries, it is important to mention that the European Union initiated cooperation with them in 2009 with a programme entitled 'Eastern Partnership'. The twentieth anniversary of the beginning of the collapse is a good opportunity to assess developments in agriculture in these countries, and to evaluate the status of the sector in the light of initial expectations. What are these countries' main objectives in the field of agriculture? Has agricultural productivity and competitiveness improved? Is it possible for these countries to reach an acceptable trade balance? Are agricultural producers better off? What policy lessons have been learned? What is behind the diversity of individual country performances?

Due to the diversity of the selected former Soviet and Balkan countries, analyses will be carried out by three country groups and the study follows this structure in every chapter:

- The Western Balkan countries or possible candidate countries of the European Union (Albania, Bosnia and Herzegovina, Croatia, Montenegro, Serbia, FYROM).
- The Western CIS¹ (Belarus, Moldova, Ukraine)
- The CIS Transcaucasia (Armenia, Azerbaijan, Georgia).

In the study the following issues will be touched upon (as chapters of the report): Resources, production performance, trade and competition, prices, farming issues, and impacts on rural areas. The next chapter tries to identify the key areas (divided into country groups) with respect to the most topical issues like land reform, support systems, food policy, and safety and human resources. The final chapter gives a summary and provides some conclusions.

This report was prepared for the European Regional Office of FAO under the guidance of Ms. Maria Kadlecikova, Regional Representative and Mr. David Sedik, Chief of Policy Analysis Unit. Eurostat (for the Western Balkan) and FAO, UN as well as World Bank databases were used as sources of information. The analysis remains within the coverage of these sources and reflects their quality. Regarding the time scope of the study, the general aim was to use data from close to the transition (early 1990s), the most recently available year (generally 2007 or

¹ CIS = Commonwealth of Independent States

2008) and another one in-between these years. The author takes full responsibility for the analysis and the conclusions presented in this report.

1. Major resources in agriculture

The grouping into Western Balkans, Western CIS and CIS Transcaucasia was made mostly on geographical grounds, although political aspects were also taken into account. As all the analyses in this study follow the same structure, it is important to justify the groupings on a different basis, especially regarding disassociation of CIS countries, as Western Balkan countries are in one block with the same long run conception (EU accession). The tool used for this was a simple “agricultural profile”, which was based on the ranking of different agrarian attributes like the share of arable land, agricultural employment or the gross added value of the sector. This tool was able to confirm the high homogeneity within the country groups and heterogeneity among them. Detailed results can be found in **Appendix 1**.

First, the available resources in agriculture are discussed in the Balkan and CIS countries. Among all the selected countries Ukraine had the largest agricultural area with around 41 million hectares, while the smallest was in Montenegro with 514,000 hectares (in 2007).

Table 1.1. Changes in agricultural area in the Western Balkan countries [1000 ha]

Countries	1992		2000		2007	
	Agricultural area	Of which arable land	Agricultural area	Of which arable land	Agricultural area	Of which arable land
Albania	1 127	51%	1 144	51%	1 119	52%
BiH	2 200	39%	2 130	47%	2 149	48%
Croatia	2 404	50%	2 064	53%	1 201	71%
Montenegro					514	34%
Serbia					5 053	65%
Serbia and Montenegro	6 188	60%	5 587	61%		
FYROM	1 307	46%	1 235	45%	1 076	40%
Total	13 226		12 160		11 112	
Average		52%		54%		57%

Source: Author’s calculations based on FAOSTAT database

Within the Western Balkans, Serbia had the most significant agricultural sector, even without Montenegro after 2005, while the least significant was in the former Yugoslav Republic of Macedonia as well as in Montenegro after 2005 (**Table 1.1**). In the years in question the agricultural area decreased significantly in Croatia, where only half of the area used in 1992 was used for agricultural purposes in 2007. Agriculture in all the other countries suffered losses in terms of the size of their territories. However, these losses were only moderate. Additionally, in Bosnia and Herzegovina and Croatia the relative size of arable land increased significantly while the decrease in the other countries was moderate. Therefore, overall, the share of arable land increased in this region.

Table 1.2. Changes in agricultural area in the Western CIS countries [1000 ha]

Countries	1992		2000		2007	
	Agricultural area	Of which arable land	Agricultural area	Of which arable land	Agricultural area	Of which arable land
Belarus	9 391	65%	9 252	66%	8 950	62%
Moldova	2 560	68%	2 544	72%	2 483	73%
Ukraine	41 929	80%	41 406	79%	41 266	79%
Total	53 880		53 202		52 699	
Average		75%		75%		74%

Source: Author's calculations based on FAOSTAT database

In the Western CIS region the overall agricultural area decreased by more than one million hectares between 1992 and 2007, while the share of arable land stayed at the same level (**Table 1.2**). The most significant agriculture in the region was undoubtedly in Ukraine and this country also had the largest share of arable land. The ratio here was the highest from the three selected regions and it was stable during the entire period under examination.

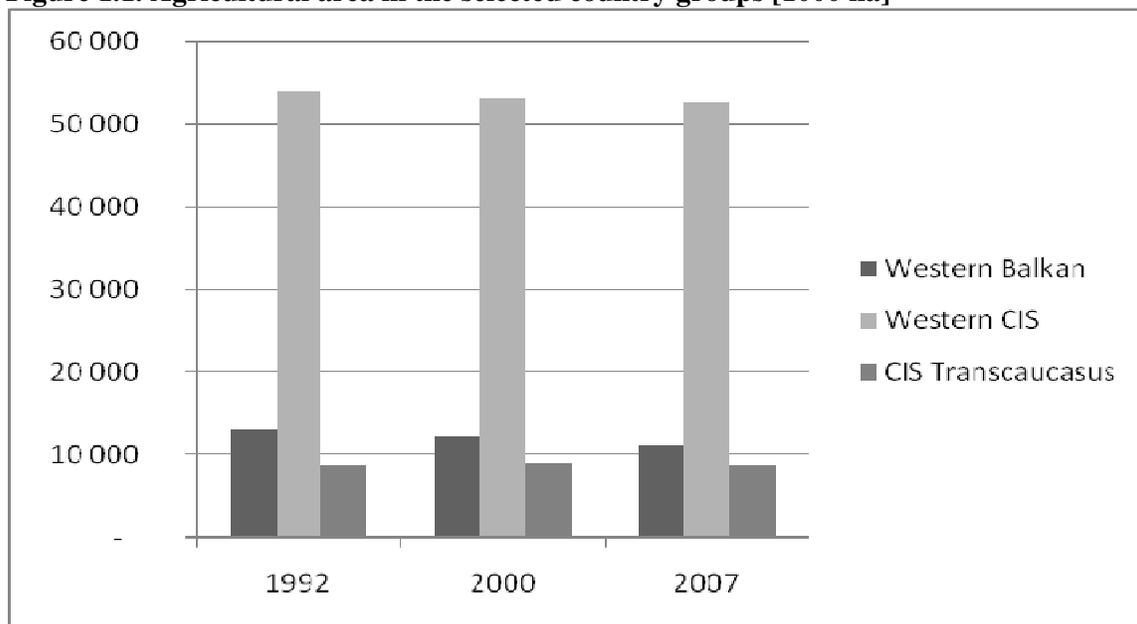
Table 1.3. Changes in agricultural area in CIS Transcaucasia countries [1000 ha]

Countries	1992		2000		2007	
	Agricultural area	Of which arable land	Agricultural area	Of which arable land	Agricultural area	Of which arable land
Armenia	1 170	36%	1 315	34%	1 615	25%
Azerbaijan	4 446	38%	4 740	39%	4 757	39%
Georgia	3 229	25%	3 000	26%	2 517	18%
Total	8 845		9 055		8 889	
Average		33%		33%		29%

Source: Author's calculations based on FAOSTAT database

In the CIS Transcaucasian countries the most significant agriculture was in Azerbaijan, although large differences in absolute size between these countries were not apparent as they were among the Western CIS countries (**Table 1.3**). The size of the agricultural area remained stable during the years under examination. However, the share of arable land decreased significantly in Armenia and Georgia. Only in Azerbaijan did this indicator stay at the same level. Therefore, overall, the share of arable land decreased in this region; this was the most moderate drop seen among all three selected country groups.

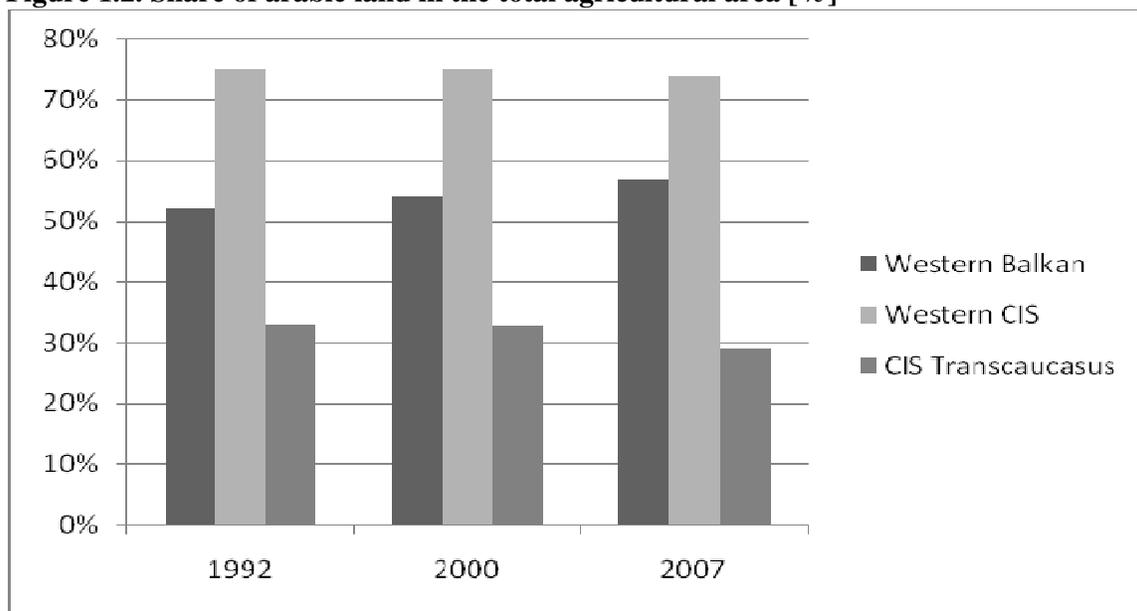
Figure 1.1. Agricultural area in the selected country groups [1000 ha]



Source: Author's calculations based on FAOSTAT database

We can say that in absolute terms the volume of agriculture – mainly due to Ukraine's large size - was much larger in the Western CIS countries than in CIS Transcaucasia and the Western Balkans (**Figure 1.1**). From 1992 to 2007 the size of the land used for agriculture decreased in the Western CIS countries and in the Western Balkans, while in CIS Transcaucasia it was almost constant.

Figure 1.2. Share of arable land in the total agricultural area [%]



Source: Author's calculations based on FAOSTAT database

The share of arable land in the total agricultural area was very high in the Western CIS countries (more than 70%). In the Western Balkans in 2007 it also accounted for more than

half of the total area (**Figure 1.2**). CIS Transcaucasia had the smallest share of arable land and showed a declining tendency. Only in the Western Balkans could moderate growth be seen.

It is also very important to examine the sectoral structure of agricultural production in the selected countries. In the following tables the relative share of crop production and livestock production will be compared in each country.

Among the Western Balkan countries crop production was dominant in Bosnia and Herzegovina, Croatia, Serbia and in FYROM. In Montenegro and in the former Serbia and Montenegro the relative share was almost the same in both sectors while in Albania livestock production was more important in terms of the value of the output of the sectors.

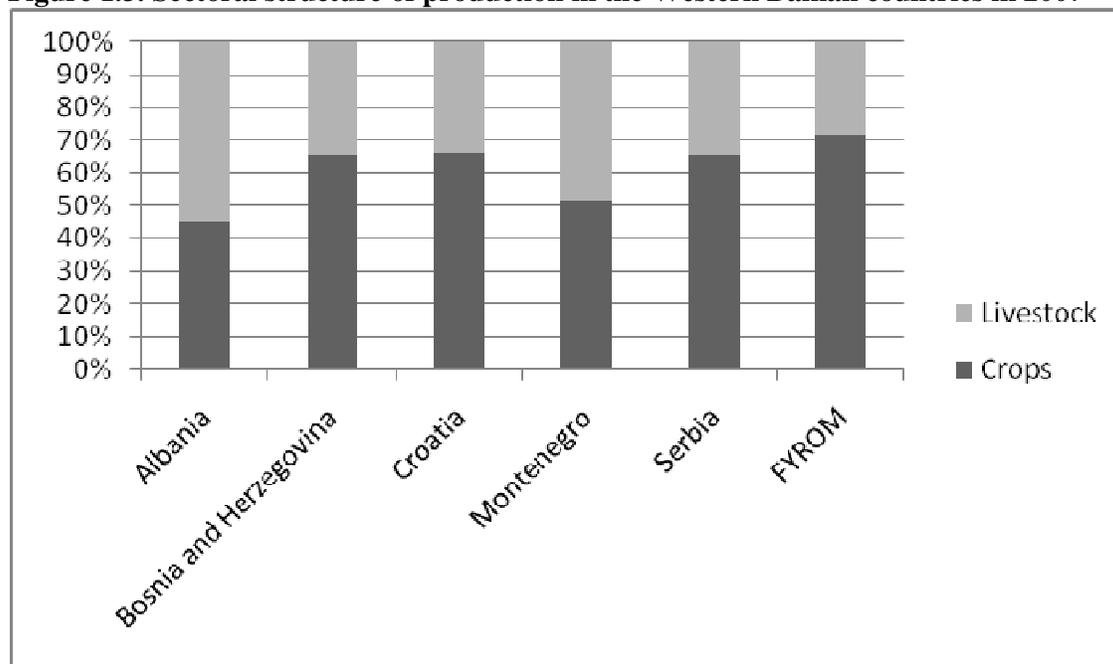
Table 1.4. Sectoral structure of production in the Western Balkan countries [1000 int \$]

Countries	Item	1992		2000		2007	
Albania	Crops	264 721	49%	328 117	45%	372 408	45%
	Livestock	274 966	51%	405 732	55%	452 410	55%
BiH	Crops	516 551	69%	426 027	70%	547 695	66%
	Livestock	227 524	31%	183 563	30%	287 539	34%
Croatia	Crops	743 815	64%	847 784	73%	765 186	66%
	Livestock	427 173	36%	313 055	27%	393 282	34%
Montenegro	Crops					65 181	51%
	Livestock					62 045	49%
Serbia	Crops					2 147 416	66%
	Livestock					1 114 849	34%
Serbia & Mont.	Crops	2 107 759	54%	1 782 343	50%		
	Livestock	1 805 194	46%	1 766 242	50%		
FYROM	Crops	497 965	78%	475 215	78%	453 090	71%
	Livestock	136 931	22%	134 592	22%	181 499	29%

Source: Author's calculations based on FAOSTAT database

From **Table 1.4** it is clearly visible that the Western Balkan countries (except Albania) were dominated by crop production in 2007. The largest share of crop production was in FYROM, where it was more than 70%. (**Table 1.4**)

Figure 1.3. Sectoral structure of production in the Western Balkan countries in 2007



Source: Author's composition based on FAOSTAT database

In the Western CIS countries crop production was the dominant sector during the period in question, though in Belarus livestock production had a higher output in 1992. During the years in question crop production in Ukraine became more important, while in Moldova the share of livestock output in 2007 was the same as it was in 1992.

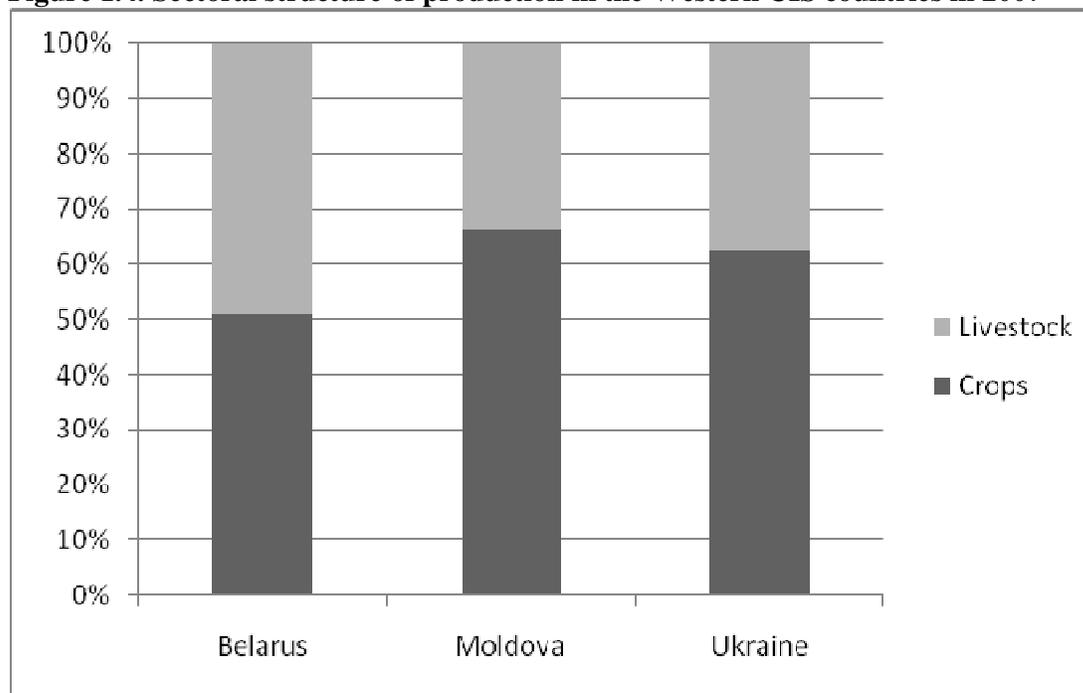
Table 1.5. Sectoral structure of production in the Western CIS countries [1000 int \$]

Countries	Item	1992		2000		2007	
		Value	%	Value	%	Value	%
Belarus	Crops	2 475 653	43%	2 348 928	52%	2 978 639	51%
	Livestock	3 260 260	57%	2 206 528	48%	2 853 091	49%
Moldova	Crops	1 274 742	66%	954 780	76%	671 955	66%
	Livestock	659 903	34%	303 417	24%	339 809	34%
Ukraine	Crops	12 371 150	52%	9 577 351	60%	11 097 860	63%
	Livestock	11 217 460	48%	6 442 289	40%	6 653 435	37%

Source: Author's calculations based on FAOSTAT database

The proportion of crops and livestock production were almost equal in Belarus in 2007 while in Moldova and Ukraine agriculture was dominated by the production of crops. (**Table 1.5**)

Figure 1.4. Sectoral structure of production in the Western CIS countries in 2007



Source: Author's composition based on FAOSTAT database

The CIS Transcaucasus region was also a crop producing region between 1992 and 2007. In Armenia the relative share of crop production increased between 1992 and 2007 but in Azerbaijan and Georgia this ratio decreased during the same period.

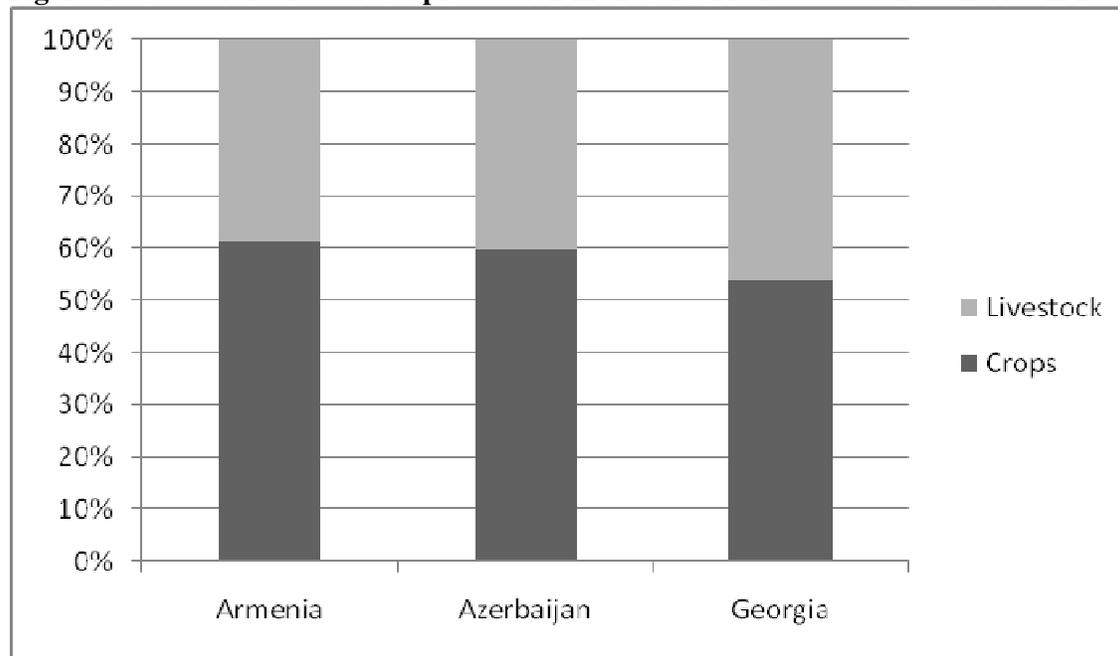
Table 1.6. Sectoral structure of production in CIS Transcaucasia[1000 int \$]

Countries	Item	1992		2000		2007	
		Value	Share (%)	Value	Share (%)	Value	Share (%)
Armenia	Crops	298 106	56%	262 733	53%	519 612	61%
	Livestock	235 268	44%	232 730	47%	327 462	39%
Azerbaijan	Crops	1 026 684	67%	782 772	60%	1 090 064	60%
	Livestock	498 426	33%	525 675	40%	732 073	40%
Georgia	Crops	558 513	66%	409 405	53%	363 661	54%
	Livestock	288 991	34%	359 977	47%	308 992	46%

Source: Author's calculations based on FAOSTAT database

The figures show that all the CIS Transcaucasian countries were dominated by crop production in 2007. (Table 1.6)

Figure 1.5. Sectoral structure of production in the CIS Transcaucasian countries in 2007



Source: Author's composition based on FAOSTAT database

The next important indicator is the level of employment in agriculture. In absolute terms Ukraine was the largest agricultural employer, where almost three and a half million people were employed in agriculture in 2007. Albania, Azerbaijan, Armenia and Georgia also had a significant proportion of their populations employed in agriculture.

Table 1.7. Agricultural employment in the Western Balkan countries [1000]

Countries	1990	2000	2007	2007/2000
Albania	N/A	542	569	105%
Bosnia and Herzegovina	N/A	47	61	130%
Croatia	N/A	225	211	94%
Montenegro	-	-	3	-
Serbia	-	-	58	-
FYROM	N/A	143	116	81%
Total	N/A	957	1 018	

Source: National statistics

In the Western Balkans the proportion of the population in agricultural employment varied from country to country. The most significant fall was in FYROM, where only 81% of the labor force from 2000 was still in agriculture in 2007. A less moderate decrease can be noted in Croatia, where it was only -6% from 2000 to 2007. In absolute terms Albania was the leading country in terms of the size of agricultural employment, while the smallest agricultural workforce was recorded in Montenegro (**Table 1.7**).

Table 1.8. Agricultural employment in the Western CIS countries [1000]

Countries	1990	2000	2007	2007/2000
Belarus	335	626	421	67%
Moldova	194	766	409	53%
Ukraine	1 219	4 721	3 454	73%
Total	1 748	6 113	4 283	

Source: CIS database (year 1990) and national statistics

In the Western CIS countries employment in agriculture decreased between 2000 and 2007 in all the three countries. However, it is very important to take into consideration that this region still has more than four million people who are considered agricultural employees (**Table 1.8**).

Table 1.9. Agricultural employment in the CIS Transcaucasian countries [1000]

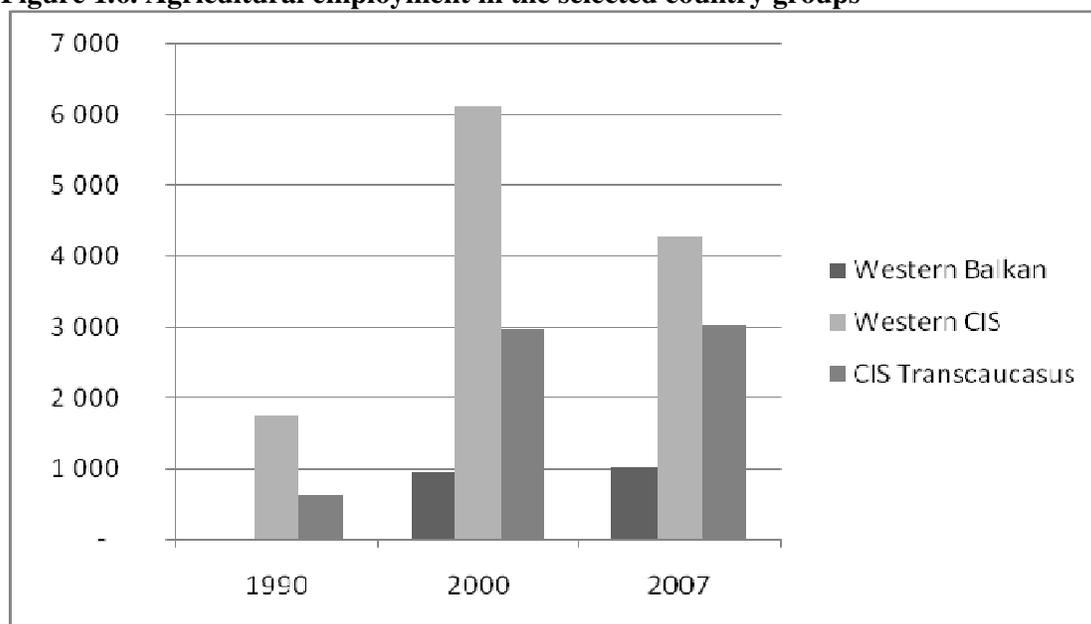
Countries	1990	2000	2007	2007/2000
Armenia	97	501	504	101%
Azerbaijan	310	1 517	1 551	102%
Georgia	225	958	966	101%
Total	632	2 976	3 021	

Source: CIS database (year 1990) and national statistics

Among the CIS Transcaucasian countries an interesting phenomenon was observed: Agricultural employment was almost the same in all the three countries (**Table 1.9**). In Azerbaijan there are still more than one and a half million people who are counted as agricultural employees and in Georgia there are also almost one million people working in this sector.

To compare the three selected country groups we can say that the most significant mass of agricultural employment was in the Western CIS countries in both 1990 and 2007 (**Figure 1.6**). From 2000 to 2007 the size of agricultural employment shrank in the Western CIS countries but in the Western Balkan and CIS Transcaucasia it remained at almost the same size.

Figure 1.6. Agricultural employment in the selected country groups



Source: Author's calculations based on CIS database and national statistics

It is also important to examine the relative share of agricultural employment. Among the selected countries the highest percentage of the population in agricultural employment was in Albania (44% in 2007), while the lowest was in Bosnia and Herzegovina (3% in 2007).

Table 1.10. Share of agricultural employment in the Western Balkan countries

Countries	1992	2000	2007
Albania	N/A	58%	59%
Bosnia and Herzegovina	N/A	8%	12%
Croatia	N/A	15%	13%
Montenegro	-	-	2%
Serbia	-	-	4%
FYROM	N/A	24%	20%

Source: Author's calculations based on national statistics

In the Western Balkans all the countries showed different tendencies between 2000 and 2007. In Croatia and FYROM the relative share of agricultural employment decreased but in Bosnia and Herzegovina it increased. The other countries had almost the same share (**Table 1.10**).

Table 1.11. Share of agricultural employment in the Western CIS countries

Countries	1990	2000	2007
Belarus	12%	14%	9%
Moldova	20%	51%	33%
Ukraine	9%	23%	17%

Source: Author's calculations based on CIS database (year 1990) and national statistics

In general, agricultural employment in the Western CIS countries decreased (**Table 1.11**). Even in Moldova, where the share was more than 50% in 2000, it fell to 33% (this is still the highest number in this country group).

Table 1.12. Share of agricultural employment in the CIS Transcaucasian countries

Countries	1990	2000	2007
Armenia	11%	45%	46%
Azerbaijan	23%	41%	39%
Georgia	16%	52%	55%

Source: Author's calculations based on CIS database (year 1990) and national statistics

Among the CIS Transcaucasian countries in 1990 the highest share was in Azerbaijan. However, by 2007 Azerbaijan had the smallest share (**Table 1.12**). In the remaining countries from this group a moderate increase was observable between 2000 and 2007.

2. Agricultural production performance

The most important agricultural indicator in the selected countries is production. In our analysis, production performance is measured by using a number of indicators such as the role of agriculture, values and indices on agricultural output, sectoral production quantities and productivity.

2.1. The role of agriculture

The role of agriculture in a country's national economy is best characterized by percentage of GDP represented by agriculture. Albania and Armenia had largest share of agriculture in GDP among all the selected countries. In both countries the share was around 20% in 2007. As with agricultural employment, the agricultural share of GDP is very low in Croatia (around 6%).

Table 2.1. Agricultural added value in the GDP of the Western Balkan countries

Countries	1992	2000	2007
Albania	52%	29%	21%
Bosnia and Herzegovina	N/A	13%	9%
Croatia	15%	8%	6%
Montenegro	N/A	12%	9%
Serbia	N/A	21%	13%
FYROM	17%	12%	12%

Source: World Bank database

Among the Western Balkan countries, it was in Albania where agriculture played the most important role in terms of national GDP. In 1992 even more than the half of the GDP came from agricultural production and it was still 21% in 2007 (**Table 2.1**).

Table 2.2. Agricultural added value in the GDP of the Western CIS countries

Countries	1993	2000	2008
Belarus	18%	14%	10%
Moldova	32%	29%	11%
Ukraine	22%	17%	8%

Source: CIS database

In Moldova agricultural GDP made up around a third of overall production. However, as in the other countries, it had fallen by 2007 (**Table 2.2**). In 2008 all the countries' agricultural added value was around 10%.

Table 2.3. Agricultural added value in the GDP of the CIS Transcaucasian countries

Countries	1993	2000	2008
Armenia	45%	26%	18%
Azerbaijan	28%	17%	6%
Georgia	70%	22%	10%

Source: CIS database

In the CIS Transcaucasian countries a similar tendency was observable as in the other two regions. The share in 2007 was already less than 20%. This represents a decrease from a very high level over the selected time period (**Table 2.3**). Meanwhile, it is important to mention that agricultural employment in Azerbaijan was the second highest (24%) in 2007, while its share of GDP was the lowest (only 5.9%) in the same year.

2.2. Agricultural output

The following tables makes it evident that there were huge differences in gross agricultural production among the countries between 1992 and 2007. In Georgia and Ukraine the value of agricultural output decreased by more than 20% while in Moldova it halved. The largest increases were in Armenia (59%) and Albania (53%).

Table 2.4. Gross agricultural output in the Western Balkan countries [1000 int. \$]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	539 687	733 849	824 818	136%	153%
BiH	744 075	609 590	835 234	82%	112%
Croatia	1 170 988	1 160 840	1 158 469	99%	99%
Montenegro	-	-	127 226	-	-
Serbia	-	-	3 262 264	-	-
Serbia and Montenegro	3 912 954	3 548 585	-	91%	-
FYROM	634 897	609 807	634 589	96%	100%
Total	7 002 601	6 662 671	6 842 600	95%	98%

Source: Author's calculations based on FAOSTAT database

The average agricultural output in the Western Balkan region remained quite stable in the period under examination. However, if we look at the individual numbers, different conclusions may be drawn (**Table 2.4**). While the output of Croatia and the Former Yugoslav Republic of Macedonia did not change significantly between 1992 and 2007, in Albania there was a significant increase and Bosnia and Herzegovina's output showed large fluctuations.

Table 2.5. Gross agricultural output in the Western CIS countries [1000 int. \$]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	5 735 914	4 555 456	5 831 730	79%	102%
Moldova	1 934 646	1 258 199	1 011 765	65%	52%
Ukraine	23 588 610	16 019 640	17 751 300	68%	75%
Total	31 259 170	21 833 295	24 594 795	70%	79%

Source: Author's calculations based on FAOSTAT database

Average output in the Western CIS countries has shrunk over the last few decades. This decrease was more than 20% in 2007 and when comparing output from 1992 with that of 2000 the decrease was 30%. While in Belarus in 2007 output was similar to 1992 levels, Moldova's production has almost halved, and in Ukraine there was a 25% decrease (**Table 2.5**).

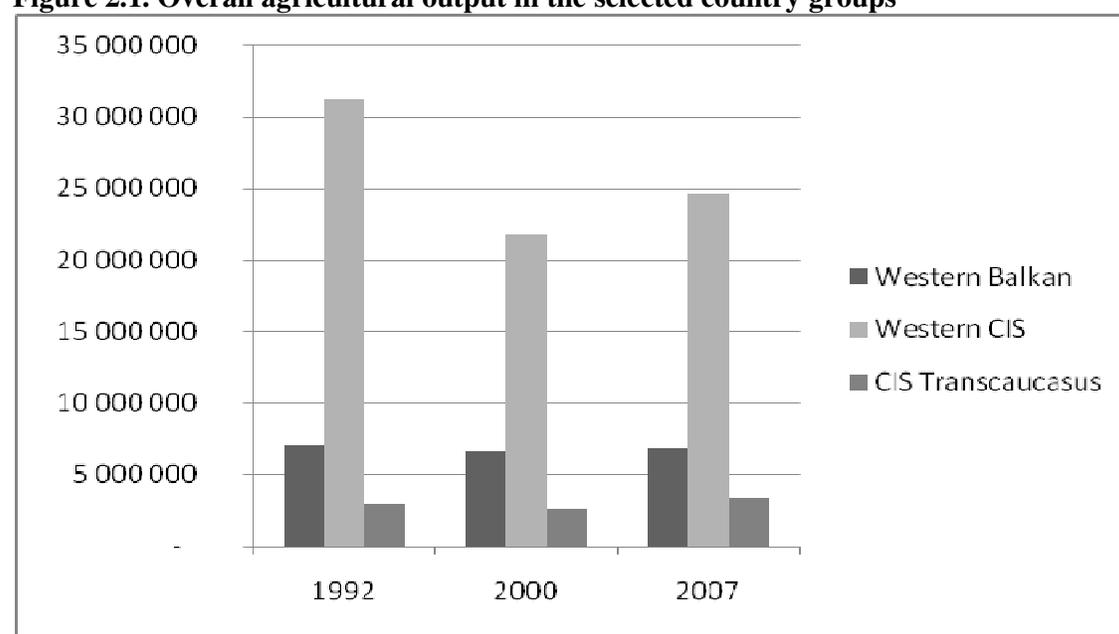
Table 2.6. Gross agricultural output in the CIS Transcaucasian countries [1000 int. \$]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	533 374	495 464	847 075	93%	159%
Azerbaijan	1 525 110	1 308 449	1 822 138	86%	119%
Georgia	847 505	769 383	672 653	91%	79%
Total	2 905 989	2 573 296	3 341 866	89%	115%

Source: Author's calculations based on FAOSTAT database

Among the country groups only the CIS Transcaucasian countries showed an increase in average output over the selected period. It is important to consider that although Armenia showed growth of almost 60% and Azerbaijan showed around 20% growth, output in Georgia declined by more than 20% (**Table 2.6**).

Figure 2.1. Overall agricultural output in the selected country groups



Source: Author's composition based on FAOSTAT database

The highest agricultural output was in the Western CIS and the lowest was in the CIS Transcaucasian countries. In the Western CIS output decreased between 1992 and 2000 but in 2007 output was already greater than it was in 2000 (but less than it was in 1992). The value of production in the Western Balkan was stagnant while in CIS Transcaucasias it increased somewhat.

2.3. Sectoral production and productivity

In the following section the three main agricultural products (cereal, meat and milk) of the countries are examined, starting with cereal production.

2.3.1. Cereal Production

Table 2.7. Cereal production in the Western Balkan countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	430 481	565 800	493 600	131%	115%
BiH	1 080 400	930 230	1 000 576	86%	93%
Croatia	2 355 828	2 770 073	2 536 081	118%	108%
Montenegro	-	-	10 418	-	-
Serbia	-	-	6 123 841	-	-
Serbia and Montenegro	7 018 843	5 262 908	-	75%	-
FYROM	623 663	564 005	468 712	90%	75%
Total	11 509 215	10 093 016	10 633 228	88%	92%

Source: Author's calculations based on FAOSTAT database

In the Western Balkans Serbia was the most significant cereal producer with more than six million tons in 2007 (**Table 2.7**). Over the period being considered overall production of cereals in the region decreased by 8% and only Croatia and Albania increased their national production levels.

Table 2.8. Cereal production in the Western CIS countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	7 136 000	4 565 000	7 014 363	64%	98%
Moldova	1 978 255	1 905 097	887 141	96%	45%
Ukraine	35 550 383	23 806 500	28 937 800	67%	81%
Total	44 664 638	30 276 597	36 839 304	68%	82%

Source: Author's calculations based on FAOSTAT database

The Western CIS countries are undoubtedly important cereal producers. Ukraine alone produced almost three times more cereal than the whole Western Balkan region together in 2007. The region is an important cereal producing area despite the fact that production in Moldova halved between 1992 and 2007. Ukraine also suffered a significant decrease (**Table 2.8**).

Table 2.9. Cereal production in the CIS Transcaucasian countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	299 949	220 819	457 021	74%	152%
Azerbaijan	1 324 700	1 496 224	1 943 683	113%	147%
Georgia	496 450	417 752	412 724	84%	83%
Total	2 121 099	2 134 795	2 813 428	101%	133%

Source: Author's calculations based on FAOSTAT database

In the CIS Transcaucasia region Azerbaijan was the dominant cereal producer and increased its output by almost 50% between 1992 and 2007. The increase in Armenia was about the same. However, Georgia became the smallest producer in the region with a fall of almost 20% (Table 2.9).

2.3.2. Meat production

Meat production will be looked at next. In order to take a deeper look at overall meat production in the countries, it is important to examine livestock headcounts for the most important species (cattle, pigs and chicken).

Table 2.10. Headcount of the cattle population in the Western Balkan countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	616	728	577	118%	94%
Bosnia and Herzegovina	550	462	468	84%	85%
Croatia	590	427	483	72%	82%
Montenegro	-	-	115	-	-
Serbia	-	-	1 087	-	-
Serbia and Montenegro	1 975	1 427	-	72%	-
FYROM	282	270	254	96%	90%
Total	4 013	3 313	2 984	83%	74%

Source: Author's calculations based on FAOSTAT database

The size of the cattle population decreased in all the countries in the Western Balkan region. In 1992 there were more than four million cattle in these countries, while in 2007 this number was less than three million. (Table 2.10)

Table 2.11. Headcount of the cattle population in the Western CIS countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	6 577	4 326	3 989	66%	61%
Moldova	1 000	423	299	42%	30%
Ukraine	23 728	10 627	6 175	45%	26%
Total	31 305	15 376	10 463	49%	33%

Source: Author's calculations based on FAOSTAT database

A dramatic decrease in the cattle population was observable in the Western CIS countries. The cattle population halved between 2000 and 2007 and less than one third of the original

population was observable in these countries. This phenomenon is explained by the dramatic decrease in Ukraine and Moldova's cattle population. In Belarus the change was not so dramatic. (Table 2.11)

Table 2.12. Headcount of the cattle population in the CIS Transcaucasian countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	566	479	620	85%	109%
Azerbaijan	1 533	1 664	2 146	109%	140%
Georgia	1 208	1 122	1 062	93%	88%
Total	3 308	3 265	3 828	99%	116%

Source: Author's calculations based on FAOSTAT database

This is the only region of the three selected country groups in which the size of the cattle population increased between 1992 and 2007. In 2000 the size of the population was almost the same as it was in 1992, while in 2007 it had grown by 16%. This was caused by the dynamic growth of Azerbaijan's cattle population (+40%). (Table 2.12)

Table 2.13. Headcount of the pig population in the Western Balkan countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	90	103	147	114%	163%
Bosnia and Herzegovina	430	450	535	105%	124%
Croatia	1 183	1 233	1 488	104%	126%
Montenegro	-	-	13	-	-
Serbia	-	-	3 832	-	-
Serbia and Montenegro	3 844	4 087	-	106%	-
FYROM	171	226	255	132%	149%
Total	5 718	6 099	6 271	107%	110%

Source: Author's calculations based on FAOSTAT database

The pig population increased significantly in all the western Balkan countries. While the average growth in the region was 10% from 1992 to 2007, the pig population in Albania grew by 63%. (Table 2.13)

Table 2.14. Headcount of the pig population in the Western CIS countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	4 703	3 566	3 642	76%	77%
Moldova	1 753	683	532	39%	30%
Ukraine	17 839	10 073	8 055	56%	45%
Total	24 295	14 322	12 229	59%	50%

Source: Author's calculations based on FAOSTAT database

Among the Western CIS countries the situation was totally different: The pig population fell by 50%. The largest decrease was in Moldova where less than a third of the 1992 population remained in 2007. (Table 2.14)

Table 2.15. Headcount of the pig population in the CIS Transcaucasian countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	224	71	153	31%	68%
Azerbaijan	137	20	21	14%	16%
Georgia	733	411	344	56%	47%
Total	1 094	501	518	46%	47%

Source: Author's calculations based on FAOSTAT database

The situation of the CIS Transcaucasian countries was similar to that of the Western CIS countries: Half the pig population disappeared between 1992 and 2007. In Azerbaijan less than one fifth of the former population remained in 2000, and this figure persisted until 2007. (Table 2.15)

Table 2.16. Headcount of the chicken population in the Western Balkan countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	2 392	4 087	4 712	171%	197%
Bosnia and Herzegovina	6 500	9 000	13 800	138%	212%
Croatia	10 104	10 351	6 816	102%	67%
Montenegro	-	-	449	-	-
Serbia	-	-	15 708	-	-
Serbia and Montenegro	23 955	18 948	-	79%	-
FYROM	4 297	3 350	2 264	78%	53%
Total	47 248	45 736	43 749	97%	93%

Source: Author's calculations based on FAOSTAT database

The total chicken population of the whole region of the Western Balkan remained almost constant between 1992 and 2007. If we look at the numbers in the individual countries the picture becomes more sophisticated. There are countries in which the population doubled (Albania, Bosnia and Herzegovina) while in some countries a significant decreases can be seen (Croatia, FYROM). (Table 2.16)

Table 2.17. Headcount of the chicken population in the Western CIS countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	49 730	26 400	26 900	53%	54%
Moldova	23 642	12 535	22 400	53%	95%
Ukraine	202 057	118 000	145 600	58%	72%
Total	275 429	156 935	194 900	57%	71%

Source: Author's calculations based on FAOSTAT database

After a significant decrease between 1992 and 2000, the population in 2007 in Moldova was almost the same as it was in 1992. The total number of chickens was almost 200 million in 2007 in these three countries. (Table 2.17)

Table 2.18. Headcount of the chicken population in the CIS Transcaucasian countries [1000 animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	3 000	4 100	3 870	137%	129%
Azerbaijan	26 665	14 200	18 000	53%	68%
Georgia	11 210	8 000	5 050	71%	45%
Total	40 875	26 300	26 920	64%	66%

Source: Author's calculations based on FAOSTAT database

The chicken population in the CIS Transcaucasian countries was around two-thirds of the 1992 population in both 2000 and 2007. There was an increase in Armenia while in Azerbaijan and Georgia the chicken population fell during the same period. (**Table 2.18**)

Table 2.19. Total meat production in the Western Balkan countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	51 400	67 300	90 175	131%	175%
BiH	52 500	30 560	54 217	58%	103%
Croatia	148 402	129 777	178 161	87%	120%
Montenegro	-	-	5 759	-	-
Serbia	-	-	473 459	-	-
Serbia and Montenegro	925 339	943 834	-	102%	-
FYROM	35 886	24 940	25 996	69%	72%
Total	1 213 527	1 196 411	827 767	99%	68%

Source: Author's calculations based on FAOSTAT database

Serbia was the most dominant meat producer among the Western Balkans but production there halved between 2000 and 2007 (**Table 2.19**). This fall in production in Serbia explains why the region's production has decreased as a whole, although in all the other countries (except FYROM) production showed a trend for growth.

Table 2.20. Total meat production in the Western CIS countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	950 600	597 900	816 600	63%	86%
Moldova	231 207	87 524	109 430	38%	47%
Ukraine	3 398 600	1 662 800	1 911 700	49%	56%
Total	4 580 407	2 348 224	2 837 730	51%	62%

Source: Author's calculations based on FAOSTAT database

The Western CIS countries (especially Moldova and Ukraine) faced an enormous reduction during the period in question. Up to 2007, only in Belarus was the decrease moderate. Overall meat production in the region in 2000 was only 51% of the 1992 level, while in 2007 it was the 62% (**Table 2.20**).

Table 2.21. Total meat production in the CIS Transcaucasian countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	67 190	49 300	69 700	73%	104%
Azerbaijan	113 200	108 730	170 572	96%	151%
Georgia	113 382	108 060	69 400	95%	61%
Total	293 772	266 090	309 672	91%	105%

Source: Author's calculations based on FAOSTAT database

The CIS Caucasus countries were the only ones where the overall meat production showed moderate growth. The 51% growth of Azerbaijan's production compensated for the 49% fall in Georgia's production in 2007 (**Table 2.21**).

2.3.3. Milk Production

Table 2.22. Milk production in the Western Balkan countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	612 100	948 007	1 016 007	155%	166%
Bosnia and Herzegovina	468 000	559 500	767 826	120%	164%
Croatia	713 534	615 472	883 226	86%	124%
Montenegro	-	-	178 020	-	-
Serbia	-	-	1 634 500	-	-
Serbia and Montenegro	1 908 400	1 837 242	-	96%	-
FYROM	181239	260394	451790	144%	249%
Total	3 883 273	4 220 615	4 931 369	109%	127%

Source: Author's calculations based on FAOSTAT database

Among the Western Balkans Serbia produced the largest amount of milk, but Albania also produced more than 1 million tons (**Table 2.22**). The region as a whole showed a growth trend: 27% more milk was produced in 2007 than in 1992. The FYROM had the most significant increase with two-and-a-half times more produced. Albania and Bosnia and Herzegovina also experienced more than 60% growth between 1992 and 2007.

Table 2.23. Milk production in the Western CIS countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	5 884 800	4 489 600	5 903 500	76%	100%
Moldova	1 134 950	573 326	603 906	51%	53%
Ukraine	19 114 008	12 657 800	12 262 150	66%	64%
Total	26 133 758	17 720 726	18 769 556	68%	72%

Source: Author's calculations based on FAOSTAT database

While the Western Balkans increased its milk production, the same was not true for the Western CIS countries. In 2007 they produced only the 72% of what they produced in 1992. Only Belarus matched its former production while Moldova's production almost halved. Ukraine also experienced a significant decrease (**Table 2.23**).

Table 2.24. Milk production in the CIS Transcaucasian countries [tons]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	394 700	452 100	642 000	115%	163%
Azerbaijan	850 400	1 031 100	1 341 278	121%	158%
Georgia	380 200	618 939	638 800	163%	168%
Total	1 625 300	2 102 139	2 622 078	129%	161%

Source: Author's calculations based on FAOSTAT database

The CIS Transcaucasian countries had a continuously growing milk output between 1992 and 2007. Overall production in the region increased by 61% and almost every country's growth was 60% until 2007. The most important milk producer here was Azerbaijan with two times more output than the other two countries where the level of production was almost the same in 2007. (**Table 2.24**)

2.3.4 Productivity

In the following productivity numbers we examine the yield of cereals and milk, and meat production from cattle and pigs.

There was a huge variance between the cereal yields in the countries; the highest number was observed in Croatia (4.56 tons/hectare in 2005) while the smallest was seen in Moldova (0.97 tons/hectare in 2007).

Table 2.25. Cereal yields in the Western Balkan countries [tons/hectare]

Countries	1992	2000	2007
Albania	2.25	3.18	3.73
Bosnia and Herzegovina	3.55	2.55	3.22
Croatia	3.97	3.99	4.56
Montenegro	-	-	2.15
Serbia	-	-	3.22
Serbia and Montenegro	2.93	2.58	-
FYROM	2.65	2.57	2.62
Average	3.16	2.99	3.53

Source: Author's calculations based on FAOSTAT database

From the Western Balkan countries only Albania and Croatia showed a continuously growing cereal yield. All the other countries experienced significant fluctuations during the years (**Table 2.25**). The highest yield in this region was in Croatia in 2007 (4.56 tons/hectare), while the smallest yield was observed in Albania in 1992 (2.25 tons/hectare).

Table 2.26. Cereal yields in the Western CIS countries [tons/hectare]

Countries	1992	2000	2007
Belarus	2.74	1.95	2.89
Moldova	2.93	2.03	0.97
Ukraine	2.83	1.95	2.21
Average	2.82	1.96	2.31

Source: Author's calculations based on FAOSTAT database

Among the Western CIS countries the average cereal yield in 1992 was not matched in 2000 or 2007. This is important, especially if we take into consideration the fact that this region is one of the world's most significant cereal producing areas. Both the highest and the lowest yields in the region were experienced in Moldova. In 1992 the yield was 2.93 tons/hectare while in 2007 it was only 0.97 tons/hectare (**Table 2.26**).

Table 2.27. Cereal yields in CIS Transcaucasian countries [tons/hectare]

Countries	1992	2000	2007
Armenia	1.84	1.41	2.23
Azerbaijan	2.11	2.34	2.67
Georgia	2.00	1.36	2.11
Average	2.05	2.05	2.51

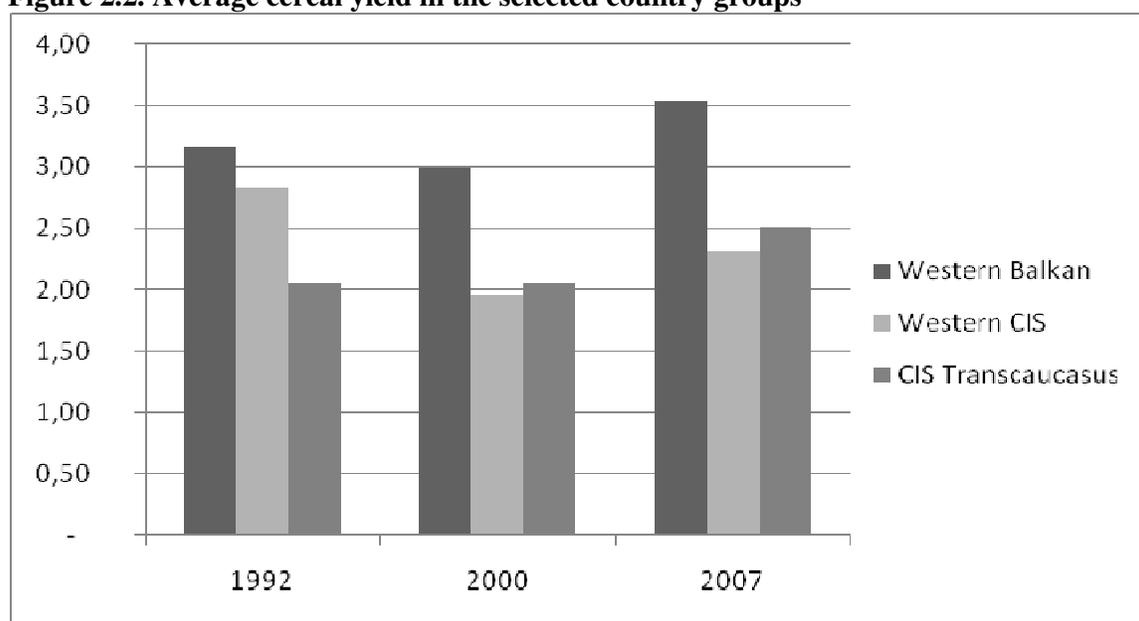
Source: Author's calculations based on FAOSTAT database

In the CIS Transcaucasian countries the average yield decreased between 1992 and 2000. However, the 2007 average was higher than in both the previous years in question. The highest yield was recorded in Azerbaijan in 2007 and the lowest was observed in Georgia in 2000 (**Table 2.27**).

If we compare the country groups we can see that cereal yields tended to fluctuate (**Figure 2.2**). Between 1992 and 2000 yields decreased in the Western CIS and Western Balkan countries. By 2007 the Western Balkan and CIS Transcaucasian countries had already exceeded their 1992 productivity levels.

Over the entire period under consideration yields in the Western Balkan countries were highest. In 1992 the CIS Transcaucasian countries had the lowest yields but in 2000 and 2007 they had already overtaken the Western CIS countries. This phenomenon was caused by the increased productivity of the CIS Transcaucasian countries but also because of falls in yields in the Western CIS countries.

Figure 2.2. Average cereal yield in the selected country groups



Source: Author's composition based on FAOSTAT database

Milk yields are set out and explained below:

Table 2.28. Milk yields in the Western Balkan countries [kg/animal/year]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	1 542	1 801	2 192	117%	142%
Bosnia and Herzegovina	1 257	1 810	2 433	144%	194%
Croatia	1 920	2 382	3 655	124%	190%
Montenegro	-	-	2 305	-	-
Serbia	-	-	2 786	-	-
Serbia and Montenegro	1 789	2 126	-	119%	-
FYROM	1 248	2 318	2 969	186%	238%
Average	1 551	2 088	2 723	135%	176%

Source: Author's composition based on FAOSTAT database

Milk yields grew continuously in all the countries in the Western Balkan region. The highest yield can be seen in Croatia in 2007. (**Table 2.28**)

Table 2.29. Milk yields in the Western CIS countries [kg/animal/year]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	2 651	2 412	3 902	91%	147%
Moldova	2 841	2 179	2 765	77%	97%
Ukraine	2 305	2 359	3 665	102%	159%
Average	2 599	2 317	3 444	89%	133%

Source: Author's composition based on FAOSTAT database

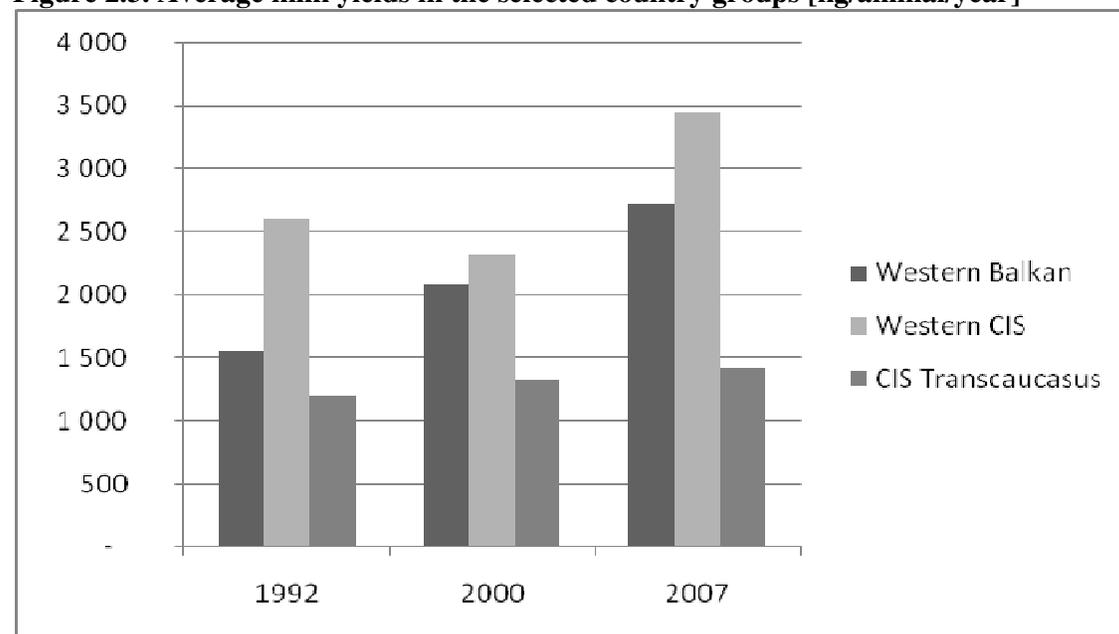
All the Western CIS countries except Moldova experienced an increase milk yields. Ukraine saw an increase of almost 60%, while yields in Belarus climbed by almost 50%. (Table 2.29)

Table 2.30. Milk yields in the CIS Transcaucasian countries [kg/animal/year]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	1 535	1 747	1 954	114%	127%
Azerbaijan	1 363	1 289	1 262	95%	93%
Georgia	679	944	1 051	139%	155%
Average	1 193	1 327	1 423	111%	119%

Source: Author's composition based on FAOSTAT database

In Azerbaijan the milk yield stayed at almost the same level in the years under consideration and only a moderate decrease was observable. In the same period Armenia and Georgia continuously increased milk production. (Table 2.30)

Figure 2.3. Average milk yields in the selected country groups [kg/animal/year]

Source: Author's composition based on FAOSTAT database

The table clearly shows that in all the years in question the highest milk yields can be seen in the Western CIS countries. It is also interesting to mention that this country group suffered a moderate decrease between 1992 and 2000, while in the two other country groups' productivity continuously increased during the same period.

Beef yields are set out and explained below:

Table 2.31. Beef yields in the Western Balkan countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	111	106	113	95%	102%
Bosnia and Herzegovina	159	134	167	84%	105%
Croatia	234	189	211	81%	90%
Montenegro	-	-	99	-	-
Serbia	-	-	193	-	-
Serbia and Montenegro	230	223	-	97%	-
FYROM	101	98	132	98%	131%
Average	167	150	152	90%	91%

Source: Author's composition based on FAOSTAT database

In the Western Balkans beef yields fell moderately during the selected time period. Only the FYROM saw significant increases in output. (Table 2.31)

Table 2.32. Beef yields in the Western CIS countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	178	170	175	95%	98%
Moldova	202	150	131	74%	65%
Ukraine	187	132	146	71%	78%
Average	189	151	151	80%	80%

Source: Author's composition based on FAOSTAT database

Among the Western CIS countries only Belarus stabilized its yield. In Moldova and Ukraine a reduction of more than 20% was observable. (Table 2.32)

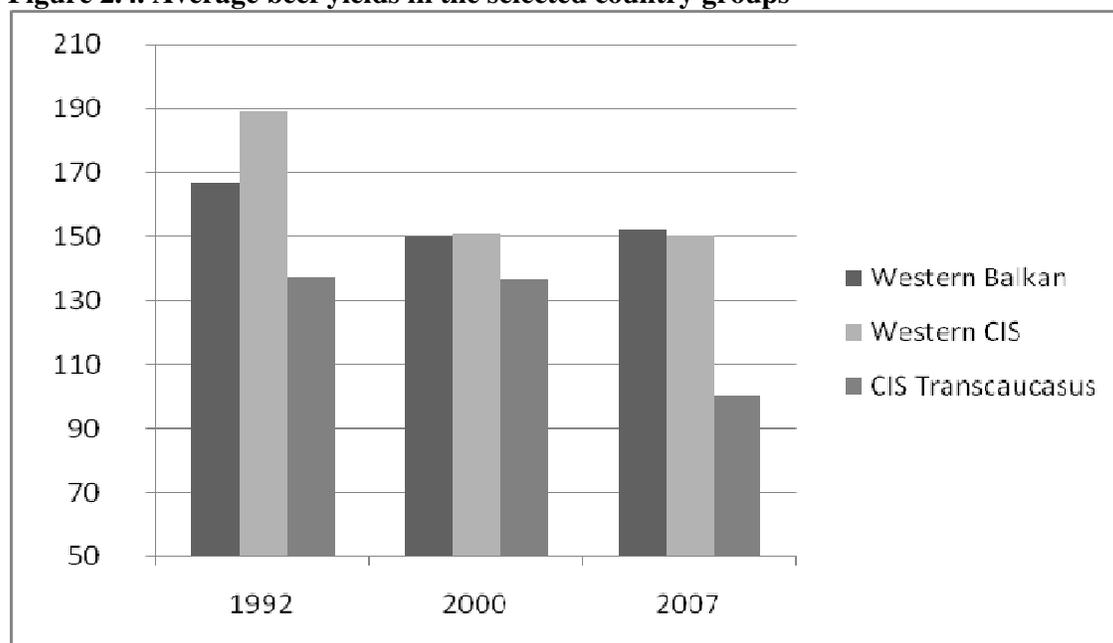
Table 2.33. Yield of beef production in the CIS Transcaucasian countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	134	118	111	88%	83%
Azerbaijan	120	111	112	92%	93%
Georgia	159	181	79	114%	49%
Average	138	137	101	99%	73%

Source: Author's composition based on FAOSTAT database

Beef yields halved in Georgia between 1992 and 2007, although the 2000 they were 14% up on the 1992 figures. In the other two countries there was also decrease. However, it was not as intensive as that experienced by Georgia. (Table 2.33)

Figure 2.4. Average beef yields in the selected country groups



Source: Author's composition based on FAOSTAT database

Average beef yields declined in all the selected country groups between 1992 and 2007. While in 1992 the highest yield was observed in the Western CIS countries, in 2007 the Western Balkans led the way. The lowest yield was found in the CIS Transcaucasian countries and decreases were most significant there.

Pork yields are set out and explained below:

Table 2.34. Pork yields in the Western Balkan countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Albania	65	67	67	103%	103%
Bosnia and Herzegovina	70	53	65	76%	93%
Croatia	74	72	78	98%	105%
Montenegro	-	-	100	-	-
Serbia	-	-	44	-	-
Serbia and Montenegro	77	78	-	101%	-
FYROM	95	93	98	98%	104%
Average	76	73	75	95%	99%

Source: Author's composition based on FAOSTAT database

In all the Western Balkan countries pork yields remained at almost the same level throughout the period being examined. The average meat output was around 75 kg per pig during these years. (Table 2.34)

Table 2.35. Pork yields in the Western CIS countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Belarus	73	77	75	105%	102%
Moldova	75	79	83	107%	111%
Ukraine	84	81	87	97%	104%
Average	77	79	82	103%	106%

Source: Author's composition based on FAOSTAT database

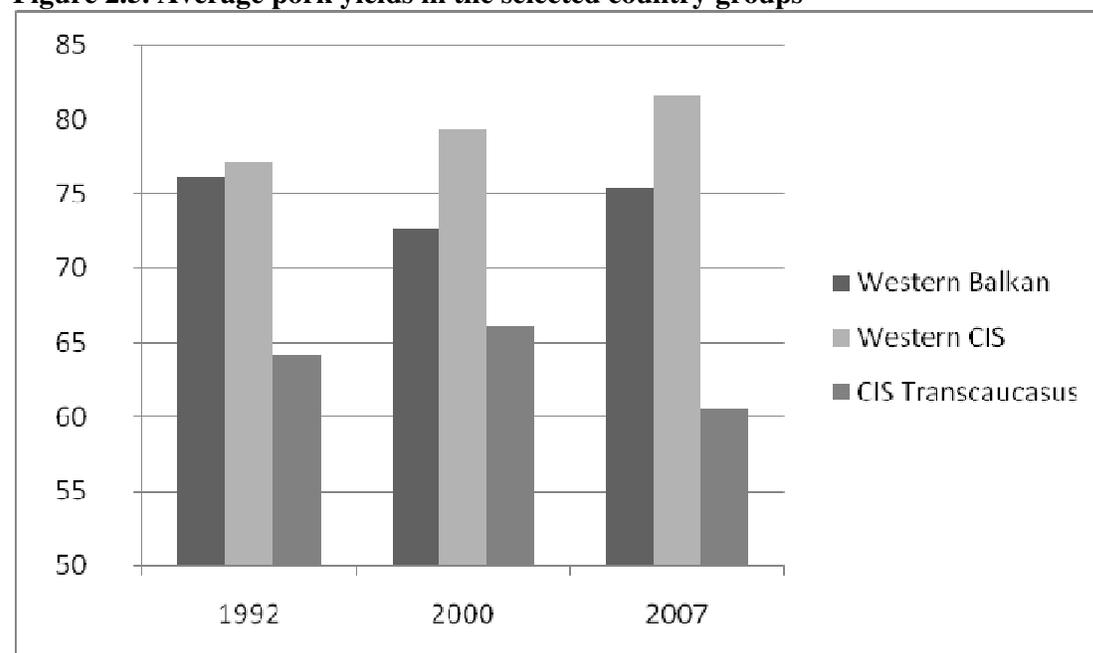
In the Western CIS countries a very moderate increase was observable and the average yield was around 82 kg per animal in 2007. (Table 2.35)

Table 2.36. Pork yields in the CIS Transcaucasian countries [kg/animal]

Countries	1992	2000	2007	2000/1992	2007/1992
Armenia	81	81	81	100%	100%
Azerbaijan	64	70	54	110%	84%
Georgia	48	48	48	100%	99%
Average	64	66	61	103%	94%

Source: Author's composition based on FAOSTAT database

In Armenia and Georgia the average yield was almost exactly the same in each of the years in question. Azerbaijan, on the other hand, experienced fluctuations in its per animal output. The average yield was around 61 kg per animal in 2007 in the region. (Table 2.36)

Figure 2.5. Average pork yields in the selected country groups

Source: Author's composition based on FAOSTAT database

As the figure shows only the Western CIS countries showed a continuous growth trend in pork yields. The other two country groups show large fluctuation and while in 2007 the

Western Balkans had the higher yields, in the CIS Transcaucasian region the average yield was less than it was in 1992.

3. Trade and competition

It is possible to gain important information regarding agriculture in the selected countries if we examine the export and import numbers between 1998 and 2007.

3.1. Export values

The value of exports increased significantly in all of the countries. For this reason it is best to take a deeper look at the numbers for each country group.

Table 3.1. Agricultural exports in the Western Balkan countries [Mio USD]

Countries	1998	2003	2007	2003/1998	2007/1998
Albania	37	48	94	130%	253%
Bosnia and Herzegovina	N/A	189	564	N/A	N/A
Croatia	706	1 010	1 732	143%	245%
Montenegro	-	-	127	-	-
Serbia	-	-	1 822	-	-
Serbia and Montenegro	515	662	-	128%	-
FYROM	239	245	483	103%	202%
Total	1 497	2 155	4 823	144%	322%

Source: Author's calculations based on WTO database

In the Western Balkans Serbia and Croatia are the two largest exporters and their export values increased significantly, especially between 2003 and 2007. The country that sold the least products abroad was Albania but even this county more than doubled its export value. Altogether the region exported three times more in 2007 than it did in 1998, at a total value of almost 5000 million USD (**Table 3.1**).

Table 3.2. Agricultural exports in the Western CIS countries [Mio USD]

Countries	1998	2003	2007	2003/1998	2007/1998
Belarus	821	1 194	2 231	145%	272%
Moldova	464	500	518	108%	112%
Ukraine	1 480	3 091	6 828	209%	461%
Total	2 765	4 785	9 578	173%	346%

Source: Author's calculations based on WTO database

Ukraine was the leading country for agricultural exports in the Western CIS region, not only in absolute terms but also in terms of the rate of growth (**Table 3.2**). In 2007 Ukraine alone produced agricultural goods for export of almost 7000 million USD. This level is four and a half times more than it was in 1998. Belarus was also an important exporter with more than 2 billion USD in 2007 which is almost three times more than it was in 1998. In line with the dynamic growth of the two larger countries' exports, there was no significant change in the Moldovan output, with 518 million USD of exports in 2007 and 12% growth from 1998 to 2007.

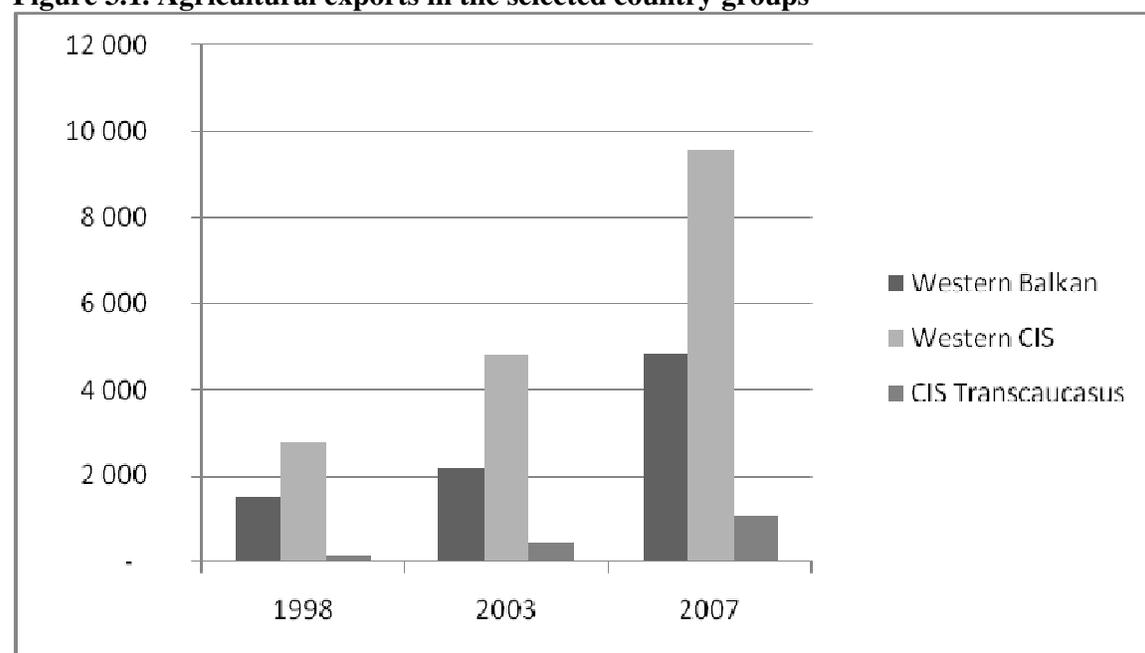
Table 3.3. Agricultural exports in the CIS Transcaucasian countries [Mio USD]

Countries	1998	2003	2 007	2003/1998	2007/1998
Armenia	15	84	194	546%	1260%
Azerbaijan	101	165	543	163%	539%
Georgia	72	176	324	244%	451%
Total	188	424	1 061	226%	564%

Source: Author's calculations based on WTO database

In absolute terms the CIS Transcaucasian countries were not active exporters. Overall exports from the region hardly exceeded the 1000 million USD mark in 2007. In contrast to the absolute numbers the relative growth was significant in all the countries and total exports were six times greater in 2007 than they were in 1998 (**Table 3.3**). It is important to mention Armenia's agricultural exports were almost thirteen times more in 2007 than they were in 1998. However, this is mainly because exports in Armenia were lagging behind in 1998.

Figure 3.1. Agricultural exports in the selected country groups



Source: Author's composition based on WTO database

This chart makes it clearly visible that the export values in all the selected countries grew dynamically between 1998 and 2007 (**Figure 3.1**). The largest region for exports is the Western CIS which exported two times more than the second largest region, the Western Balkans, and nine and a half times more than the smallest, the CIS Transcaucasian region.

3.2. Import values

As with export values, the value of agricultural imports increased significantly in all of the countries.

Table 3.4. Agricultural imports in the Western Balkan countries [Mio USD]

Countries	1998	2003	2007	2003/1998	2007/1998
Albania	236	384	729	163%	309%
Bosnia and Herzegovina	N/A	702	1 659	N/A	N/A
Croatia	938	1 414	2 342	151%	250%
Montenegro	-	-	496	-	-
Serbia	-	-	1 364	-	-
Serbia and Montenegro	729	872	-	120%	-
FYROM	361	361	659	100%	183%
Total	2 264	3 733	7 251	165%	320%

Source: Author's calculations based on WTO database

Among the Western Balkan countries overall import levels increased significantly. These countries imported more than three times more in 2003 than they did in 1998. From the overall 7 251 million USD in 2007 Croatia alone imported more than 2 300 million USD. This amount means Croatia was the leading agricultural importer in the region. The smallest was Montenegro with less than 500 million USD (**Table 3.4**).

If agricultural imports are compared to sectoral GVA, an interesting picture emerges. This ratio is around 10% and throws light on a growing tendency in the Western Balkan countries (Albania excluded where this value is about 2%).²

Table 3.5. Agricultural imports in the Western CIS countries [Mio USD]

Countries	1998	2003	2007	2003/1998	2007/1998
Belarus	1 156	1 607	2 487	139%	215%
Moldova	98	247	509	251%	517%
Ukraine	1 309	2 438	4 584	186%	350%
Total	2 564	4 291	7 580	167%	296%

Source: Author's calculations based on WTO database

In the Western CIS countries agricultural imports were three times more in 2007 than they were in 1998. The two largest agricultural exporters in the region were also leading in terms of imports. Moldova imported only to the value of 509 million USD in 2007 from the total of 7 580 million USD for the whole region (**Table 3.5**). Regarding the growth rate it is worth mentioning that relative growth was largest in Moldova although Belarus also doubled its imports while in Ukraine they were three and a half times more in 2007 than they were in 1998.

² It should be noted that the import values are measured in current USD, while the earlier data on domestic production were denominated in international USD. Therefore, it is impossible to compare them directly. For the calculation of these values the World Bank's World Development Indicators were used but that includes imports of agricultural raw materials as a percentage of merchandise imports instead of total imports.

The agricultural import to sectoral GVA ratio shows the same values in Belarus and Moldova (around 10%) as in the Western Balkan countries, while the Ukrainian one is lower (6.5%).

Table 3.6. Agricultural imports in the CIS Transcaucasian countries [Mio USD]

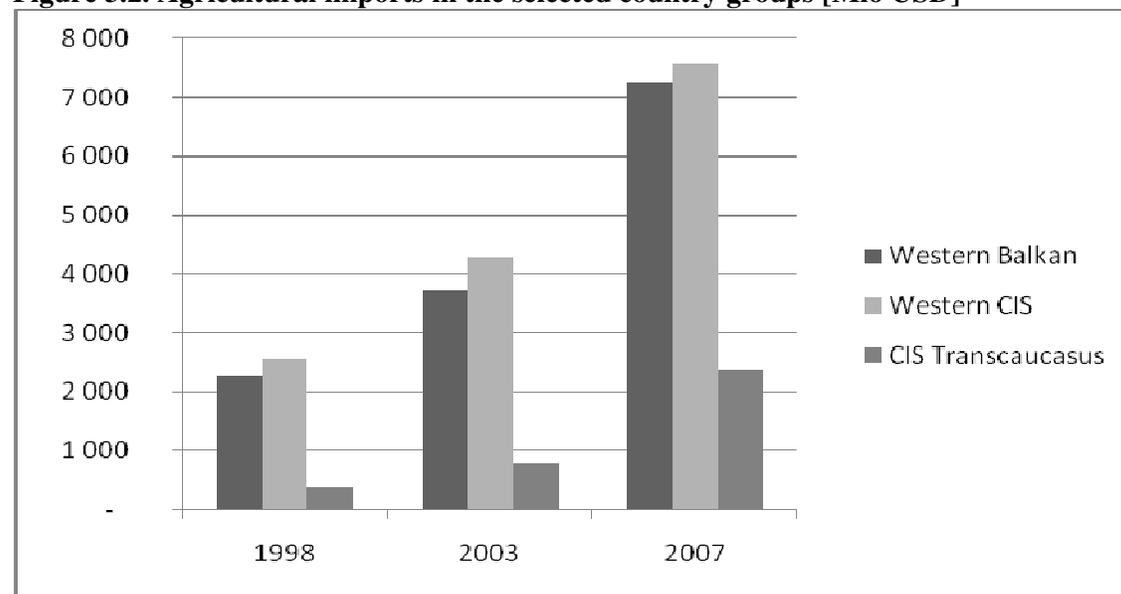
Countries	1998	2003	2007	2003/1998	2007/1998
Armenia	298	225	553	76%	185%
Azerbaijan	193	334	962	173%	499%
Georgia	170	211	849	124%	501%
Total	661	770	2 364	117%	358%

Source: Author's calculations based on WTO database

In Georgia and Azerbaijan agricultural imports were five times better in 2007 than they were in 1998 and Armenia also showed growth of 85%. Altogether these three countries imported agricultural products to the value of 2 364 million USD. This is three and a half times more than in 1998 (**Table 3.6**).

The level of the above mentioned import dependency is lowest in CIS Transcaucasia, ranging between 1.6% (Armenia) and 3.7% (Azerbaijan).

Figure 3.2. Agricultural imports in the selected country groups [Mio USD]



Source: Author's composition based on WTO database

In absolute terms the largest agricultural exporters were also significant importers in the examined period. The Western Balkan and the Western CIS countries were the largest agricultural regions in terms of imports. These two country groups had almost the same value of imports in 2007. Meanwhile, agricultural imports in the CIS Transcaucasian countries also showed a dynamic growth trend (**Figure 3.2**).

3.3. Trade balance

Having examined the data set out above it is also worth calculating the agricultural trade balances for both the individual countries and country groups. It is clearly visible that there were only a few countries with positive agricultural trade balances in the examined period.

Table 3.7. Agricultural trade balances in the Western Balkan countries [Mio USD]

Countries	1998	2003	2007
Albania	-199	-336	-635
Bosnia and Herzegovina	N/A	-512	-1 095
Croatia	-232	-404	-610
Montenegro	-	-	-369
Serbia	-	-	458
Serbia and Montenegro	-213	-210	-
FYROM	-122	-115	-177
Total	-767	-1 578	-2 428

Source: Author's calculations based on WTO database

Among the Western Balkans only Serbia (after the disintegration of Serbia and Montenegro) showed an agricultural trade surplus in 2007. All the other countries in this region imported more than they exported. The largest deficit was in Bosnia and Herzegovina, where the deficit was more than 1 000 million USD in 2007. The overall deficit for the region was 2 428 million USD in 2007. (Table 3.7)

Table 3.8. Agricultural trade balances in the Western CIS countries [Mio USD]

Countries	1998	2003	2007
Belarus	-335	-413	-256
Moldova	366	253	9
Ukraine	171	653	2 245
Total	202	493	1 998

Source: Author's calculations based on WTO database

Mainly thanks to Ukraine, the Western CIS countries as a group showed an agricultural surplus in all the years in the period in question. Only Belarus had a deficit in every year, while Moldova's surplus was decreasing and the surplus of Ukraine was continuously increasing between 1998 and 2007. (Table 3.8)

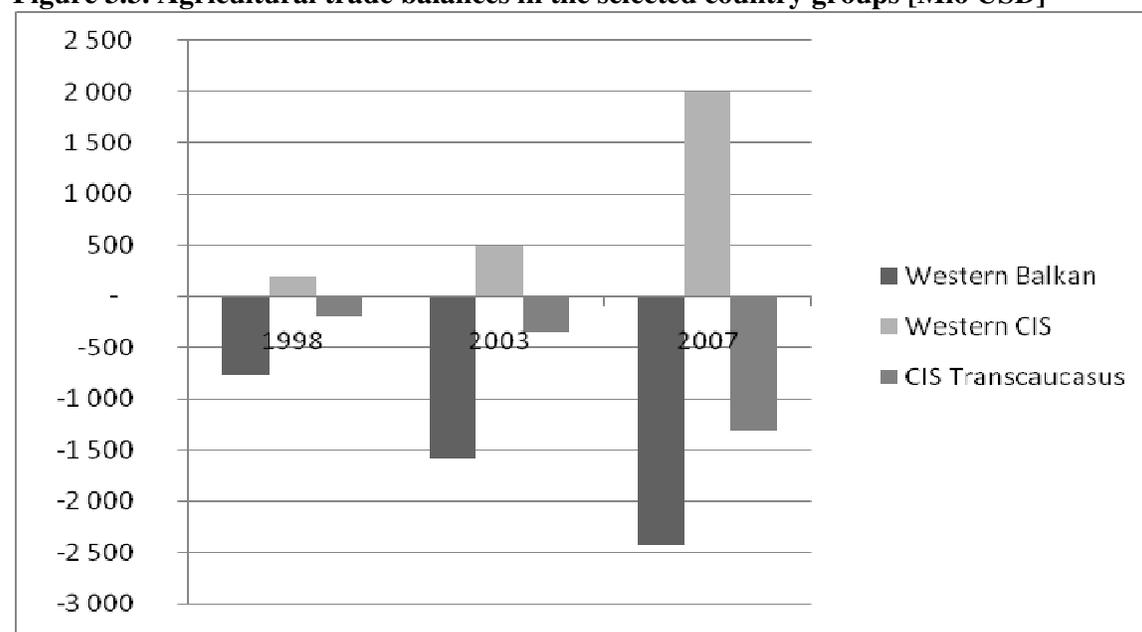
Table 3.9. Agricultural trade balances in the CIS Transcaucasian countries [Mio USD]

Countries	1998	2003	2007
Armenia	N/A	-141	-359
Azerbaijan	-92	-169	-419
Georgia	-98	-36	-525
Total	-190	-346	-1 304

Source: Author's calculations based on WTO database

The CIS Transcaucasia region was a net importer of agricultural goods between 1998 and 2007. The deficit in these countries became increasingly large during the years and by 2007 it was already 1304 million USD. (**Table 3.9**)

Figure 3.3. Agricultural trade balances in the selected country groups [Mio USD]



Source: Author's composition based on WTO database

For a final comparison of the agricultural trade balances between the regions it is important to mention that only three countries (Serbia, Moldova and Ukraine) showed surpluses from agricultural trade, while all the other countries were net importers of agricultural goods in all the selected years. Only because of Ukraine's surplus could the Western CIS countries together show an increasing surplus, while in the Western Balkan and CIS Transcaucasian countries the deficits were growing continuously.

4. Price development

The development of prices is an important indicator of the added value in agriculture in the selected countries. In the second chapter the quantity of the main products was examined. This chapter focuses on changes in prices. In order to get a more detailed overview the prices of the most important products will be examined rather than the aggregated prices. Unfortunately no data was available for Montenegro.

4.1. Cereal prices

Based on FAO statements in the selected countries, the three most commonly produced cereals were wheat, maize and barley. Therefore, we have focused on these cereals to gain a picture of the price developments in the selected countries.

Table 4.1. Producer prices for wheat in the Western Balkan countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Albania	176	195	310	110%	176%
Bosnia and Herzegovina	N/A	119	207	N/A	N/A
Croatia	168	108	197	64%	117%
Serbia	-	-	189	-	-
Serbia and Montenegro	N/A	62	-	N/A	-
FYROM	167	156	244	93%	146%

Source: Author's calculations based on FAOSTAT database

Between 1993 and 2007 wheat prices in the selected countries (where data was available) showed fluctuations. From 1993 to 2000 the prices decreased in Croatia and FYROM, but increased in Albania. In 2007 wheat was more expensive everywhere than it was in 1993. The highest price in the region was observed in Albania in 2007 while the lowest price was in Serbia and Montenegro in 2000 (**Table 4.1**).

Table 4.2. Producer prices for wheat in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	129	145	N/A	N/A
Moldova	55	84	178	152%	324%
Ukraine	70	90	158	129%	227%

Source: Author's calculations based on FAOSTAT database

In the Western CIS area wheat prices tended to grow continuously everywhere. The most expensive wheat was to be found in Moldova in 2007 and the cheapest was also in Moldova in 1993 (**Table 4.2**).

Table 4.3. Producer prices for wheat in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	79	163	304	208%	387%
Azerbaijan	68	113	199	166%	293%
Georgia	889	320	197	36%	22%

Source: Author's calculations based on FAOSTAT database

In the CIS Transcaucasian countries two tendencies were observed. While in Armenia and Azerbaijan wheat prices were continuously growing, prices in Georgia were falling. In Georgia one ton of wheat cost 889 USD in 1993 (this is the highest price in the region). The cheapest wheat was available in Azerbaijan for 68 USD/ton in 1993 (**Table 4.3**).

Table 4.4. Producer prices for maize in the Western Balkan countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Albania	170	202	354	119%	209%
Bosnia and Herzegovina	N/A	128	287	N/A	N/A
Croatia	141	89	274	63%	194%
Serbia	-	-	209	-	-
Serbia and Montenegro	N/A	72	-	N/A	-
FYROM	107	93	267	86%	249%

Source: Author's calculations based on FAOSTAT database

Maize prices at least doubled everywhere between 1993 and 2007 while in Croatia and FYROM there was a moderate decrease between 1993 and 2000. The lowest price in the region was in Serbia and Montenegro in 2000 and the highest was in Albania in 2007 (**Table 4.4**).

Table 4.5. Producer prices for maize in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	138	206	N/A	N/A
Moldova	112	82	219	74%	196%
Ukraine	164	71	165	43%	101%

Source: Author's calculations based on FAOSTAT database

After a fall between 1993 and 2000, maize prices doubled in Moldova, while in Ukraine after a drop in 2000, prices reached their 1993 levels again in 2007. Moldova had both the cheapest and the most expensive maize prices in the region in the selected time period. While in 2000 one ton of maize cost 82 USD, in 2007 it had reached 219 USD (**Table 4.5**).

Table 4.6. Producer prices for maize in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	79	163	245	208%	312%
Azerbaijan	87	95	345	109%	396%
Georgia	713	257	349	36%	49%

Source: Author's calculations based on FAOSTAT database

Maize prices in the CIS Transcaucasian countries showed a similar tendency to wheat prices. In Armenia and Azerbaijan prices grew continuously; but in Georgia prices halved between 1993 and 2007. Therefore, the most expensive maize was available in Georgia in 1993 and the cheapest was available in Armenia in 1993 (Table 4.6).

Table 4.7. Producer prices for barley in the Western Balkan countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Albania	164	313	337	191%	206%
Bosnia and Herzegovina	N/A	148	298	N/A	N/A
Croatia	158	103	382	65%	241%
Serbia	-	-	204	-	-
Serbia and Montenegro	N/A	73	-	N/A	-
FYROM	107	93	267	86%	249%

Source: Author's calculations based on FAOSTAT database

The most expensive barley among the Western Balkans was available in Croatia in 2007 while the cheapest was in Serbia and Montenegro in 2000. **In 2007 barley was more expensive everywhere than it was in 1993 (Table 4.7).**

Table 4.8. Producer prices for barley in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	94	109	N/A	N/A
Moldova	43	66	111	152%	254%
Ukraine	85	69	176	81%	206%

Source: Author's calculations based on FAOSTAT database

In Moldova the price of barley grew continuously while in Ukraine there was a decrease in barley prices in 2000. The most expensive barley among the Western CIS countries was to be found in Ukraine in 2007 while the cheapest was in Moldova in 2000 (Table 4.8).

Table 4.9. Producer prices for barley in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	52	133	303	255%	578%
Azerbaijan	62	101	184	162%	297%
Georgia	658	237	242	36%	37%

Source: Author's calculations based on FAOSTAT database

In Armenia barley cost almost six times more in 2007 than it did in 1993, while in Georgia the opposite was observable: barley prices in 2007 were only 37% of 1993 levels. The lowest barley prices were available in Armenia in 1993 and the highest prices were in 1993 in Georgia (**Table 4.9**).

In conclusion we can say that the price development of these three cereals showed similar tendencies in each of the regions. In general the prices showed a tendency for growth; except in Georgia, where the highest price for each cereal was found in 1993 and these levels decreased significantly.

4.2. Meat prices

In terms of meat production beef and pork are in the TOP3 in each of the selected countries so for a better comparison we will focus on the price development of these two products.

Table 4.10. Producer prices for beef in the Western Balkan countries [USD/ton]

countries	1993	2000	2007	2000/1993	2007/1993
Albania	2 172	2 992	5 816	138%	268%
Bosnia and Herzegovina	N/A	1 286	1 822	N/A	N/A
Croatia	2 636	1 575	2 371	60%	90%
Serbia	-	-	2 899	-	-
Serbia and Montenegro	N/A	1 377	-	N/A	-
FYROM	1 750	1 952	2 167	112%	124%

Source: Author's calculations based on FAOSTAT database

Producer prices for beef increased everywhere except in Croatia where a moderate decrease was visible. The most expensive beef was available in Albania in 2007 while the cheapest was available in Croatia in 1993 (**Table 4.10**).

Table 4.11. Producer prices for beef in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	727	1 688*	N/A	N/A
Moldova	613	659	1 425	108%	233%
Ukraine	841	645	1 965	77%	234%

* Data for 2006.

Source: Author's calculations based on FAOSTAT database

In Ukraine beef prices decreased between 1993 and 2000, but by 2007 significant growth was visible. The situation was similar in Moldova, where the cheapest beef was available in 1993.

The price of beef doubled in Belarus between 2000 and 2007. The highest price for one ton of beef was to be paid in Ukraine in 2007 (**Table 4.11**).

Table 4.12. Producer prices for beef in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	591	1 416	3 535	239%	598%
Azerbaijan	181	758	2 296	418%	1268%
Georgia	3 988	1 502	3 282	38%	82%

Source: Author's calculations based on FAOSTAT database

In Armenia and Azerbaijan beef prices increased at a fast rate between 1993 and 2007. In Armenia the 2007 price was six times more than the 1993 equivalent, and in Azerbaijan it was almost thirteen times more. Georgia experienced the opposite trend: While in 1993 one ton of beef was almost 4000 USD, in 2000 the price was only 38% of this and in 2007 it was 82% of the original. The Georgian price from 1993 was the highest in the region while the lowest was seen in Azerbaijan in 1993 (**Table 4.12**).

Table 4.13. Producer prices for pork in the Western Balkan countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Albania	1 744	2 018	3 702	116%	212%
Bosnia and Herzegovina	N/A	1 076	1 962	N/A	N/A
Croatia	2 344	1 652	2 317	70%	99%
Serbia	-	-	1 521	-	-
Serbia and Montenegro	N/A	813	-	N/A	-
FYROM	1 553	1 395	2 439	90%	157%

Source: Author's calculations based on FAOSTAT database

Producer prices of pork in the Western Balkans were highest in Albania in 2007 and lowest in Serbia and Montenegro in 2000. **From 1993 to 2007 prices increased in Albania and FYROM while in Croatia they remained at the same level (Table 4.13).**

Table 4.14. Producer prices for pork in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	1 033	1 946*	N/A	N/A
Moldova	650	804	1 675	124%	258%
Ukraine	771	810	2 064	105%	268%

* Data for 2006

Source: Author's calculations based on FAOSTAT database

In all the Western CIS countries pork prices showed a continuously increasing tendency during the entire period. Pork was cheapest in Moldova in 1993 and most expensive in Ukraine in 2007 (**Table 4.14**).

Table 4.15. Producer prices for pork in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	887	1 759	3 791	198%	427%
Azerbaijan	444	769	2 181	173%	491%
Georgia	4 136	1 474	3 221	36%	78%

Source: Author's calculations based on FAOSTAT database

In Armenia in 2007 one ton of pork cost more than four times what it did 1993 while in Azerbaijan this difference was even greater: Prices for 2007 were five times more than they were in 1993. In Georgia the price of pork also significantly decreased over the period in question (**Table 4.15**).

In conclusion we can say that from 1993 to 2007 the price of both kinds of meat increased in all the countries except Croatia, where it remained at almost the same level, and in Georgia where a significant decrease was observable. In general, meat was at its most expensive in the CIS Transcaucasian region in 2007.

4.3. Milk prices

Among all dairy products, cow's milk was produced in the highest quantity in every selected country. It is important to mention that in some countries sheep's milk (Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Moldova, Serbia and Montenegro and the Former Yugoslav Republic of Macedonia) and goat's milk (Albania, Belarus, Croatia and Ukraine) were also important products.

Table 4.16. Producer prices for cow's milk in the Western Balkan countries [USD/ton]

countries	1993	2000	2007	2000/1993	2007/1993
Albania	240	285	429	119%	179%
Bosnia and Herzegovina	N/A	203	350	N/A	N/A
Croatia	291	187	390	64%	134%
Serbia	-	-	315	-	-
Serbia and Montenegro	N/A	91	-	N/A	-
FYROM	260	259	388	100%	149%

Source: Author's calculations based on FAOSTAT database

Milk prices were higher in all the Western Balkan countries in 2007 than they were in 1993. The lowest price in the region was found in Serbia and Montenegro in 2000 while the highest was in Albania in 2007 (**Table 4.16**).

Table 4.17. Producer prices for cow's milk in the Western CIS countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Belarus	N/A	84	198	N/A	N/A
Moldova	49	137	269	278%	546%
Ukraine	104	99	329	95%	317%

Source: Author's calculations based on FAOSTAT database

Producer prices for milk in Moldova grew continuously; and the price in 2007 was five and a half times what it was in 1993. In Ukraine, after a moderate decrease in 2000, significant growth was observable in 2007. The cheapest milk in the region was available in Moldova in 1993 and the most expensive in Ukraine in 2007 (**Table 4.17**).

Table 4.18. Producer prices for cow milk in the CIS Transcaucasian countries [USD/ton]

Countries	1993	2000	2007	2000/1993	2007/1993
Armenia	82	191	327	231%	397%
Azerbaijan	42	244	321	586%	773%
Georgia	1 136	385	376	34%	33%

Source: Author's calculations based on FAOSTAT database

The price of cow's milk developed enormously in Azerbaijan between 1993 and 2007. One ton of milk cost almost eight times more in 2007 than it did in 1993. In Armenia the prices were four times higher in 2007. In Georgia milk prices were only a third of the 1993 prices in both 2000 and in 2007. The cheapest cow's milk in the region was available in Azerbaijan in 1993 and the most expensive in Georgia, also in 1993 (**Table 4.18**).

In conclusion we can say that, except for Georgia, there was an increasing tendency in all the countries between 1993 and 2007. This growth was most intensive in Azerbaijan, Moldova, Armenia and Ukraine. In general, prices for cow's milk were lowest in the Western CIS countries.

5. Farming issues

A review of farming structure is essential to understanding the effects of transition both on sectoral and farm levels (Lerman, 2007). There are two major issues that need to be analyzed in this respect; that is, farm structure and farm size.

5.1. Western Balkans

The varying structure of available data necessitates separate analysis for the Western Balkan and the CIS country groups. In most cases data for agricultural output by farm categories (agricultural enterprises/private farms) is not available in the national statistics of the Western Balkan countries. In general it can be stated that the majority of the agricultural area being used is in private hands³, and that the private sector dominates agricultural production. **Table 5.1** shows the number of agricultural holdings and the distribution of utilised agricultural area by size group. If we compare UAA to the agricultural area analyzed earlier, there are quite immense differences which can only be explained by the exclusion of agricultural enterprises. It is a very interesting characteristic of Western Balkan countries, that a certain part of the agricultural land has not been cultivated. It is especially typical in Serbia, where around 20% of available agricultural land is not in use (Njegovan – Bošković, 2006). The reasons for this phenomenon are numerous, varying from the presence of land mines to intensive outward migration (FAO, 2005).

Table 5.1. Number of agricultural holdings and distribution of UAA [1000]

Categories	Albania	BiH	Croatia	Montenegro	Serbia*	FYROM*
Agricultural holdings	394.9	515.0	449.9	43.2	778.9	192.4
0 - 2 ha	354.6	250.0	299.7	28.6	360.3	83.5
2 - 5 ha	40.0	150.0	86.0	8.6	244.1	38.6
5 - 10 ha	0.2	90.0	42.6	3.8	131.4	50.4
10 - 100 ha	0.05	20.0	15.8	1.7	36.8	11.9
<100 ha	0.0	0.2	5.8	0.7	6.3	5.1
UAA (ha)	427.3	2,444.0	1,077.4	136.6	2,869.0	264.4
0 - 2 ha	305.1	N/A	118.0	23.3	347.3	188.6
2 - 5 ha	120.0	N/A	188.9	29.4	854.4	
5 - 10 ha	1.3	N/A	214.2	27.9	957.7	42.7
10 - 20 ha	0.9	N/A	164.4	24.0	503.4	33.1
<20 ha		N/A	391.9	31.9	206.3	
Average size	1.1	4.7	2.4	3.2	3.7	1.4

* Data refers only to private family farms (agricultural enterprises and cooperatives are excluded)

Source: ARCOTRASS (2006), MonStat (2003) for Montenegro, SSO (2007) for FYROM

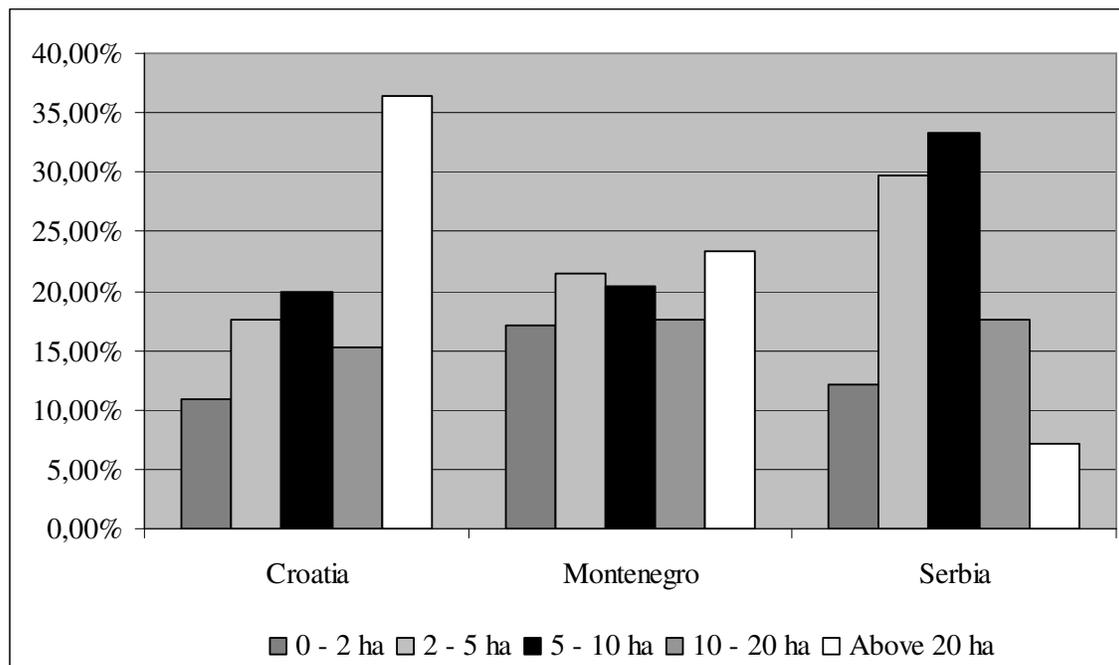
The table shows that the number of agricultural units refers to the size of agricultural area. Generally, countries with higher UAA have more agricultural holdings. Besides their number, their distribution is also very important. It seems to be a general phenomenon of agriculture in the Western Balkans that the majority of producers are small. One of its most important reasons for this is the former Yugoslavian agricultural policy which limited farm sizes. A

³ Even in Serbia 87% of land is privately owned (Bogdanov et. al. 2007).

maximum size of 10 hectares was enforced until the mid-1980s (Njegovan – Bošković, 2006). In each country around 50% of the production units belong to the 0-2 hectare size category. As we move toward the larger size categories, the number of holdings continuously decreases with the only exception being 2-5 and 5-10 ha categories in FYROM. According to available data, there are no agricultural holdings over 100 hectares in Albania and only a few in Bosnia and Herzegovina and Montenegro. The latter is quite surprising as the highest share of large holdings can be found in Serbia.⁴

Besides the distribution of different size agricultural holdings, the distribution of utilised agricultural area is also important. However one should note that although there is a remarkable correlation between the two sets of data, the size categories are different. Despite the huge number of production units in the lowest size category, they use a smaller percentage of the total UAA with the exception of Albania and FYROM where agricultural production is dominated by small farms. According to the average size, Albanian farms are the smallest among the Western Balkan countries analyzed here. In the other countries the majority of UAA can be found in the middle size categories (2-5 and 5-10 ha). Croatia is special from this perspective as the highest share of UAA is in the largest size category (above 20 ha). The graph below demonstrates the land distribution by size categories in Croatia, Montenegro and Serbia. The reason of this selection is the missing data for Bosnia and Herzegovina, while in Albania and FYROM land distribution is biased toward the smallest land categories (up to 5 ha).

Figure 5.1. Land distribution by size categories in Croatia, Montenegro and Serbia



Source: Author's composition based on ARCOTRASS (2006) and MonStat (2003) for Montenegro

⁴ There is no detailed data on large farms in Serbia and Montenegro, but their average sizes were 1,547 and 347 hectares respectively, while in the case of cooperatives these values were 326 and 108 hectares respectively in 2005 (Njegovan – Bošković, 2006).

Figure 5.1 illustrates the points of the previous paragraph. In Croatia land use is dominated by the largest land size category, more than one third of agricultural land fits into the above 20 ha group. Land structure is quite balanced in Montenegro as the share of different size categories are more or less the same. In Serbia the 2-5 and 5-10 ha categories account for more than 60% of the total land use of private family farms.

Generally speaking the average size of agricultural holdings is small; starting from 1.1 ha (Albania) and going to 4.7 ha (Bosnia and Herzegovina). In most cases this land is formed from small parcels, which makes production more costly and less efficient. The major problem is the geographical distribution of these parcels. They are very often located far apart from each other. This type of land distribution is one of the most significant barriers to a well functioning lease market.

5.2. Western CIS countries

CIS countries will be analyzed in comparative perspective, as similar data is available from the CIS database. Firstly, we demonstrate agricultural output by farm categories and secondly, the main characteristics of private farms will be examined. **Table 5.2** summarises the structure of the analyzed Western CIS countries by farm categories.

Table 5.2. Structure of agricultural output by farm category in Western CIS

	1990	2000	2007
Belarus			
Agricultural enterprises (including private farms)	75%	62%	65%
Household plots	25%	38%	35%
Moldova			
Agricultural enterprises	82%	29%	28%
Household plots and private farms	18%	71%	72%
Ukraine			
Agricultural enterprises (including private farms)	73%	38%	43%
Household plots	27%	62%	57%

Source: CIS database

Moldova and Ukraine are characterised by continuous decreases in the share for agricultural enterprises. Belarus is a different case as the share there had increased by 2007 when compared to the 2000 figures. It seems that soviet type farming (large-scale collective farms – kolkhozes and sovkhoses) have been maintained in Belarus since the transition.⁵ Generally, the Western CIS countries still have relatively strong positions both in terms of land use and production. Although this position varies from country to country (stronger in Belarus and weaker in Ukraine and Moldova) the Ukrainian data is a bit different from the two others as the share of agricultural enterprises also includes private farms. Without their inclusion the value would be closer to the one seen in Moldova.

Besides the output structure, the number of farms and their average area is also an important indicator. The structure of agriculture in the CIS countries is totally different than that in the Western Balkan countries and it has some very special (unique) characteristics. Therefore it is

⁵ It is also underlined by one of the lowest World Bank's ECA Land Reform Index among the CIS countries (Csaki – Kray, 2005).

very difficult to make one summary table with the different types of producers.⁶ Production can be divided into three main sections:

- **Household plots.** Very small in size, producing goods mainly for the consumption of the household.
- **Private farms**
- **Agricultural enterprises.** In some CIS countries there are medium⁷ and (super)large enterprises (like in Ukraine), while in other countries only large ones exist (like in Georgia).

Table 5.3 shows some basic characteristics of the private farms. It is very important to keep in mind that the total area used by private farms is much less than the total agricultural area of the given countries. The difference can be explained by the land use of household plots and agricultural enterprises.

Table 5.3. Main characteristics of private farms in Western CIS

	1993	2000	2009
Belarus			
Number of registered farms (1000)	2.4	2.7	2.0
Area of land plots on registered farms (1000 ha)	45.4	76.6	118.2
Average land per farm (ha)	18.9	28.4	59.1
Moldova			
Number of registered farms (1000)	0.5	131.6	292.2*
Area of land plots on registered farms (1000 ha)	1.0	285.4	539.1*
Average land per farm (ha)	2.0	2.2	1.8*
Ukraine			
Number of registered farms (1000)	14.7	35.9	42.4
Area of land plots on registered farms (1000 ha)	292.0	1162.3	4327.8
Average land per farm (ha)	19.9	32.4	102.1

* Data for 2005

Source: CIS database

In Belarus and Ukraine the average size of private farms is quite large; however. Their share in the total UAA is relatively small; around 10% in Ukraine and much less in Belarus. It can be seen from the table that in Belarus and Ukraine the land allocated to private farms increased faster than the number of registered farms, which explains the growing average land per farm value. In Moldova the opposite happened and the average farm size is closer to the Western Balkans' average values.

5.2.1. Land structure in Ukraine

Ukraine is a perfect example of the above mentioned farming mixture, and at the same time it is the largest agricultural producer among the selected countries. Release of land parcels provided the basis of small-scale farming (private farmers and households). Their share in both land use and production shows a continuously increasing trend with about one third of total UAA and 70% of the total output (Morton et. al., 2005). Farming on household plots is very popular in Ukraine, using around 11 million hectares and producing two thirds of the

⁶ In order to receive a better picture of this, the Ukrainian situation will be presented in the following sub-chapter as an example.

⁷ In some cases they are the reformed collective agricultural enterprises.

agricultural output. It is very typical in the rural areas and is done mainly at subsistence level. **Table 5.4** summarises the main characteristics of these households.

Table 5.4. Land distribution of the household plots in Ukraine

Size categories	Share of the categories
Below 0.1 ha	6.6%
0.11-0.15 ha	6.6%
0.16-0.50 ha	49.5%
0.51-1.0 ha	28.5%
Over 1 ha	8.8%
Average size	0.5 ha

Source: Morton et. al., 2005

The dominant category is the 0.16-0.50 hectares. The overall average size of household plots is around 0.5 ha. This size is certainly not enough for living off. Therefore, farmers also need to have another job. It is notable that these plots occupy only about one third of the land but produce two thirds of the output. This means that they are very efficient compared to the agricultural enterprises. In the rural areas, where unemployment is a more serious problem, this type of additional income is essential. However, it should be mentioned that some households also produce for commercial purposes (mainly the bigger ones). In Belarus, the average size of household plots is almost double the Ukrainian value (0.97 ha). Overall, they are using 1095200 ha (World Bank, 2009).

Unlike with households, farming is the profession of private farmers. It means that the role of additional income and subsistence is more important in their case as they have no other occupation. The following table sums up the land structure of private farms (**Table 5.5**).

Table 5.5. Land distribution of private farms in Ukraine

Size categories	Share of the categories
Below 3 ha (including farms with no land)	9.7%
3.1-5.0 ha	8.3%
5.1-10.0 ha	11.1%
10.1-20.0 ha	13.1%
20.1-50 ha	36.5%
50.1-100.0 ha	10.7%
100.1-500 ha	8.1%
Over 500 ha	2.5 ha

Source: Morton et. al., 2005

As can be seen from **Table 5.5**, private farms are clearly larger than household farms. Their average size is about 100 ha, although some private farmers have either no land at all or only a small amount. What is really impressive is that more than 10% of the farms can be characterised as having more than 100 ha of land.

Finally, at the other end of the spectrum (super) large-scale holdings can be found. Unfortunately there is no available data on their significance. According to Demyanenko's estimations, the average size of such a holding was about 80,000 ha of arable land in 2008, and is expected to grow to 110 000 ha in 2009 (Demyanenko, 2008). Their share in arable land use was 17.6% in 2008 and will be about 25% in 2009 and their significance is expected to grow in the near future. The size of large commercial farms is on average 1 326 ha, while

in Belarus this value is 3 985 hectares. There they are take up 6.4 million ha which is 86.3% of the entire agricultural land in the country (World Bank, 2009). Generally dominate the arable sector and livestock production. However, private farms and household plots have quite high shares in the fruit and vegetable sector.

5.3. CIS Transcaucasia

The CIS Transcaucasian countries have implemented stronger reforms and the composition of agricultural output reflects this (Table 5.6).

Table 5.6. Structure of agricultural output by farm category in CIS Transcaucasia

	1990	2000	2007
Armenia			
Agricultural enterprises	65%	2%	3%
Households' plots and private farms	35%	98%	97%
Azerbaijan			
Agricultural enterprises	65%	2%	4%
Households' plots and private farms	35%	98%	96%
Georgia			
Agricultural enterprises	52%	24%*	10%**
Households' plots and private farms	48%	76%*	90%**

* Data for 1995

** Estimated

Source: CIS database

The overwhelming dominance of private farms and household farms (household plots) in the agricultural output of the CIS Transcaucasian countries can be seen in the table above. The share of agricultural enterprises is between 3% and 10%. Dramatic changes have taken place since the transition, as in 1990 the majority of the agricultural output came from agricultural enterprises. In practice, these countries chose a totally different form of agriculture from that practiced in the Soviet Union. This process was quick in Armenia and Azerbaijan, but a bit slower in Georgia.

The characteristics of private farms in CIS Transcaucasia are more or less homogenous with the exception of Azerbaijan (Table 5.7). The number of farms increased rapidly after the transition in every country. In Azerbaijan a visible concentration took place. However, not only the number of farms fell, but also the total area of private farms. Average land sizes are very small; the Georgian value being the lowest among all the selected countries. In Azerbaijan the value is close to the average, although this type of farming occupies only a small share of the total agricultural area.

Table 5.7. Main characteristics of private farms in CIS Transcaucasia

	1993	2000	2009
Armenia			
Number of registered farms (1000)	238.3	335.1	339.2*
Area of land plots on registered farms (1000 ha)	310.0	458.9	469.7*
Average land per farm (ha)	1.3	1.4	1.4*
Azerbaijan			
Number of registered farms (1000)	0.3	36.1	2.6
Area of land plots on registered farms (1000 ha)	9.0	115.4	25.2
Average land per farm (ha)	30.0	3.0	9.6
Georgia			
Number of registered farms (1000)	N/A	N/A	728.2**
Area of land plots on registered farms (1000 ha)	N/A	N/A	757.9**
Average land per farm (ha)	N/A	N/A	1.0**

* Data for 2006

** Data for 2008

Source: CIS database and DS (2009) for Georgia

6. Impacts on Rural Areas

Not only the transition, but also the present global financial crisis, has seriously affected rural areas in the selected countries. These effects are felt even more strongly in those countries where the majority of the population lives in rural areas. This chapter will go through rural issues in detail by analyzing demographic and economic data. The data used here comes from the national statistical offices (for Western Balkans), the statistical yearbook of CIS (for CIS countries) and the United Nations (Population Division of the Department of Economic and Social Affairs).

6.1. Demographic impacts

The demographic impacts of the transition are hard to measure. However, there are some commonly used indicators which are worthy of note. One of these indicators is the rural-urban distribution of population. The following table shows the main characteristics of the urban-rural population in the Western Balkan countries (**Table 6.1**).

Table 6.1. Urban-rural population in the Western Balkans

Countries	1990		2000		2010*	
	Urban	Rural	Urban	Rural	Urban	Rural
Albania	36.4%	63.6%	41.7%	58.3%	48.0%	52.0%
BiH	39.2%	60.8%	43.2%	56.8%	48.6%	51.4%
Croatia	54.0%	46.0%	55.6%	44.4%	57.8%	42.2%
Montenegro	48.0%	52.0%	58.5%	41.5%	59.5%	40.5%
Serbia	50.4%	49.6%	51.1%	48.9%	52.4%	47.6%
FYROM	57.8%	42.2%	62.9%	37.1%	67.9%	32.1%
Average	47.5%	52.5%	50.6%	49.4%	53.8%	46.2%

* Estimation

Source: UN database

In Albania and Bosnia and Herzegovina the majority of the population is classified as rural, even in 2010. Conversely, in FYROM the share of rural population was smaller than 50% in 1990 and only one third of the total population will be identified as rural in 2010. The generally expected decreasing trend in the share of rural population can be seen in all the countries. This is emphasized by the average figures.

Table 6.2 contains the same data for Western CIS countries. The overall decrease in the rural population is the same as in the Western Balkans.

Table 6.2. Urban-rural population in Western CIS countries

Countries	1990		2000		2010*	
	Urban	Rural	Urban	Rural	Urban	Rural
Belarus	66.0%	34.0%	69.9%	30.1%	74.3%	25.7%
Moldova	46.8%	53.2%	44.6%	55.4%	41.2%	58.8%
Ukraine	66.8%	33.2%	67.1%	32.9%	68.1%	31.9%
Average	65.6%	34.4%	66.3%	33.7%	67.5%	32.5%

* Estimation

Source: UN database

It is worthwhile noting that in Moldova the trend over the 20 years was an increase in the rural population. Therefore, the generally used long-term phenomenon of decreasing rural and increasing urban population is not exhibited in all of these countries. Not surprisingly Moldova has the highest share of rural population and it is expected to reach 60% in the near future. The lowest shares can be found in Belarus and Ukraine. The average values are dominated by the Ukrainian trends as almost 80% of the total population of Western CIS lives in Ukraine.

Table 6.3 shows the main characteristics of the population in the CIS Transcaucasian countries. This country group is different from the other two as the average share of rural population increased between 1990 and 2000 and will remain the same for 2010 (**Table 6.3**).

Table 6.3. Urban-rural population in CIS Transcaucasia

Countries	1990		2000		2010*	
	Urban	Rural	Urban	Rural	Urban	Rural
Armenia	67.5%	32.5%	65.1%	34.9%	63.7%	36.3%
Azerbaijan	53.7%	46.3%	51.2%	48.8%	52.2%	47.8%
Georgia	55.1%	44.9%	52.7%	47.3%	52.9%	47.1%
Average	57.2%	42.8%	54.5%	45.5%	54.7%	45.3%

* Estimation

Source: UN database

The average trend is similar for every country in the first two years, but contains contradictory processes in the last 10 years, as the share of rural population is expected to increase in Armenia (from 34.9% to 36.3%), only a slight decrease is anticipated in Georgia and a moderate decrease is expected in Azerbaijan (from 48.8% to 47.8%). The averages are dominated by Azerbaijan where the majority of the CIS Transcaucasian population lives. Its share was almost 45% in 1990 but has risen to 53%. This was caused by two contradictory trends: Dynamic growth in Azerbaijan, and a remarkable decline in the two other countries between 1990 and 2000, especially in Georgia.

Any examination of demographic impacts should contain an analysis of poverty levels. It is a general assumption that poverty is higher in rural areas than in the urban ones. The next table shows poverty levels in the Western Balkans (**Table 6.4**).

Table 6.4. Poverty in the population of the Western Balkans

Countries	Survey year	Population below the poverty line		
		Rural	Urban	National
Albania	2002	29.6%	19.8%	25.4%
Bosnia and Herzegovina	2001–02	19.9%	13.8%	19.5%
Croatia	2004	17.0%	5.7%	11.1%
Montenegro	2003	9.4%
Serbia	2003	10.6%
FYROM	2003	22.3%	...	21.7%

Source: World Bank (2008), World Bank (2003) for Serbia and Montenegro, Nestić – Vecchi (2006) for Croatia

Although the long gap between the years in which the data was collected makes comparisons difficult, some general issues can be identified. The poverty rates are moderate for Croatia, Montenegro and Serbia at around 10%, while they are much higher for Albania, Bosnia and Herzegovina and FYROM. Therefore, from a poverty perspective the country group can be split in two. It is also important to note the higher percentage of the population below the poverty line in rural areas, which is a general phenomenon in the Western Balkan countries.

The second country group in the poverty analysis is the Western CIS (**Table 6.5**).

Table 6.5. Poverty in the population of the Western CIS

Countries	Survey year	Population below the poverty line		
		Rural	Urban	National
Belarus	2004	20.1%	11.6%	14.5%
Moldova	2002	67.2%	42.6%	48.5%
Ukraine	2003	28.4%	...	19.5%

Source: World Bank (2008), UNDP (2005) for Belarus

What becomes obvious when looking at the table is that Moldova had the highest share of rural poverty (67.2%). Moldova excluded, the national poverty rates are more or less the same as they were for the second group of the Western Balkans. Another similarity is the higher percentage of the population below the poverty line in rural areas. If we expand the analyzed period, a remarkable thing can be found: Belarus applied a very successful poverty reduction program at the beginning of this century as the poverty rate fell from 41.9% in 2000 to 14.5% in 2004 (World Bank 2008).

The basic assumption behind the distribution of urban-rural differences⁸ cannot be generalised, as the opposite can be seen in the CIS Transcaucasian countries (**Table 6.6**). However, this ratio turned around later in those countries. For example, in Armenia it was only in 2003 when urban poverty was lower than rural poverty (IMF, 2005). In this country group poverty is a real and pressing problem because a high percentage of the population is living below the poverty line (from 49.6% to 54.5%). Poverty is a bigger problem in the CIS Transcaucasian countries, plus Moldova, than it is in the Western Balkans or in the other

⁸ The share of population below the poverty line is lower in the urban areas than in the rural areas and vice versa.

Western CIS countries. Another important issue is the higher numbers of poor people in urban areas which is a unique characteristic of CIS Transcaucasia.

Table 6.6. Poverty of the population in CIS Transcaucasia

Countries	Survey year	Population below the poverty line		
		Rural	Urban	National
Armenia	2001	48.7%	51.9%	50.9%
Azerbaijan	2001	42.0%	55.0%	49.6%
Georgia	2003	52.7%	56.2%	54.5%

Source: World Bank (2008)

If this analysis is expanded using earlier or later data, a more or less continuous decrease can be seen for all the analyzed countries. However, the rate of decrease is very different in each group. That is, it is slower in the CIS Transcaucasian countries, while it is faster in the other countries. For example, the national share of the population below the poverty line in Armenia decreased to 42.9% in 2003; and in Georgia in 2005 to 39.4% (IMF, 2005 and 2006). In addition, in the past an interesting fact became observable in Georgia. That is, the population below the poverty line decreased in the rural areas but increased in urban areas between 2002 and 2003 (World Bank 2008). Nevertheless, this is not unique as the same thing happened in the FYROM (World Bank, 2008).

The following group of indicators includes the age structure and vital statistics. **Table 6.7** summarises the key values of these elements for Western Balkans.

Table 6.7. Ageing and vital statistics in the Western Balkans

Countries	% of 65+ (A)	% of pensioners (B)	Ratio of A/B	Natural increase rate
Albania	9%	16.8%	53.6%	7.1%
Bosnia and Herzegovina	14%	19.1%	73.3%	1.5%
Croatia	17%	22%*	77.3%	-2.1%
Montenegro	13%	14.7%	88.4%	2.9%
Serbia	17%	22%*	77.3%	-4.6%
FYROM	11%	13.2%	83.3%	2.0%

* Estimated

Source: Author's calculations based on national statistics

The percentage of people over 65 shows the magnitude of the ageing problem that faces these countries. The average percentage in the New Member States is around 13% according to the Eurostat database and these averages are very close to that figure. However, they are much higher in Croatia (17%), which is the country closest to accession. High numbers of people that are over 65 indicates a significant ageing problem, especially if related to a negative natural increase. Croatia is a perfect example of this, but the same process can be identified in Serbia as well.

The percentage of pensioners shows the economic aspect of the ageing problem. Of course on the one hand it should be higher than the percentage of over 65s as the retirement age is about 60 (but definitely less than 65 years) in most of the countries. On the other hand it is also obvious that not all the pensioners receive old-age pensions. For example, some receive disability pensions. The important factor is the difference between these two ratios, which is represented in the third column. If this ratio is around 50% than almost half of the pensioners

are younger than 65 years. Giving pensions to those people who are able to work (e.g., war veterans, employees of bankrupted heavy industry factories) is just a transformation of the basic problem. This ratio is above 80% in Montenegro and the FYROM, where most of the pensioners are above 65. On the flipside is Albania, where this value is slightly above 50%.

Natural increase represents the percentage difference between the crude birth rate and the crude death rate. If it is negative, then the population is decreasing. Generally speaking developed countries can be characterised by low or even negative natural increase rates, while developing countries have a positive or high natural increase rate. It can be seen from **Table 6.7** that Croatia and Serbia have negative natural increase rates. This predicts the growing tendency towards a higher percentage of elderly people in the population on the long run. For countries with existing ageing problems negative natural increase rates just deepens and exacerbates them.

The next table shows the same data in the same structure for the Western CIS countries (**Table 6.8**).

Table 6.8. Ageing and vital statistics in Western CIS

Countries	% of 65+ (A)	% of pensioners (B)	Ratio of A/B	Natural increase rate
Belarus	14%	25.2%	55.6%	-3.0%
Moldova	10%	17.6%	56.8%	-1.4%
Ukraine	16%	28.5%	56.1%	-6.2%

Source: Author's calculations based on CIS (2008)

The percentage of over 65s in the Western CIS countries is almost the same as the figure for the Western Balkans. At the same time all the other indicators shows more significant problems. The percentage of pensioners is itself higher and represents more than one quarter of the total population in Belarus and Ukraine. It is also stressed by the fact that the majority of the Western CIS population lives in Ukraine. This huge difference can be seen in their ratios which are close to 50%. This negative situation is stressed by an overall negative natural increase rate. **Generally speaking, the actual situation of this country group is worse than in the Western Balkans.**

Table 6.9. Ageing and vital statistics in CIS Transcaucasia

Countries	Rate of 65+ (A)	Rate of pensioners (B)	Ratio of A/B	Natural increase rate
Armenia	11%	16.2%	67.9%	4.1%
Azerbaijan	7%	14.6%	47.9%	11.7%
Georgia	15%	20.0%	75.0%	3.1%

Source: Author's calculations based on CIS (2008)

Finally a totally different picture can be drawn for CIS Transcaucasia (**Table 6.9**). The percentage of people over 65 is the smallest among the country groups and is especially low in Azerbaijan (only 7%). The rate of pensioners is also the smallest among the country groups and so the same applies for their ratio. Another speciality is the relatively high growth rate (6.3%). The highest growth rate can be found in Azerbaijan (11.7%). While Western CIS countries seem to be dwindling societies, CIS Transcaucasia has a growing population.

6.2. Economic impacts

The transition has caused radical changes in both CIS and Western Balkan countries. Some of these changes have already been explained in previous chapters. Another way of examining these changes is by looking at the structure of GDP. This provides the opportunity to examine some practical relationships, such as the well known correlation between a high share of third sector (services) and economic development. Unfortunately, the lack of statistical information does not make a detailed analysis possible in the rural-urban context. The following table summarises the GDP composition by sector (**Table 6.10**).

Table 6.10. GDP composition by sector in the Western Balkans [value added, %]

Sectors/countries	Albania	BiH	Croatia	Montenegro	Serbia	FYROM	Averages*
1990							
Agriculture	35.9%	N/A	10.9%	N/A	N/A	8.5%	18.4%
Industry	48.2%	N/A	35.8%	N/A	N/A	44.5%	42.8%
Services	15.9%	N/A	53.3%	N/A	N/A	47.0%	38.7%
2000							
Agriculture	29.1%	6.5%	8.4%	12.5%	20.6%	12.0%	14.9%
Industry	19.0%	21.7%	28.4%	23.4%	31.4%	33.8%	26.3%
Services	51.9%	71.8%	63.2%	64.1%	48.0%	54.2%	58.9%
2008							
Agriculture	21.0%	6.2%	6.4	8.9%	13.0%**	11.3%	11.1%
Industry	19.7%	22.0%	28.4	17.9%	28.4%**	28.4%	24.1%
Services	59.3%	71.8%	65.2	73.2%	58.6%**	60.3%	64.7%

* Not weighted averages (lack of data, different years, but dominated by Croatia and Serbia)

** Data for 2007

Source: World Bank database, FOoS (2006, 2008) for Bosnia and Herzegovina

When analysing the GDP composition in the long run a decreasing trend of agricultural contribution GDP can be identified. The reason for this is mainly an increase of employment in the other two sectors. However, in some years occasional growth could be observed due to good yields, or when GDP decline in the other sectors was larger than that seen in agriculture, which results in relatively higher share of GDP. In this country group it happened only once for FYROM (8.5% in 1990 and 12.0% in 2000). The values went back to the same level by 2008 (around the 11.1% average) except in Albania where it is still very high (21.0%). In the case of Albania its share is even higher than the share of industry (which is the smallest among the countries).

Table 6.11. GDP composition by sectors in Western CIS [value added, %]

Sectors/countries	Belarus	Moldova	Ukraine	Averages
1993				
Agriculture	18.3%	31.5%	21.7%	21.6%
Industry	38.1%	42.7%	36.9%	37.2%
Services	43.6%	25.8%	41.4%	41.2%
2000				
Agriculture	14.2%	29.0%	17.0%	16.7%
Industry	38.5%	21.7%	35.6%	35.9%
Services	47.3%	49.3%	47.4%	47.4%
2008				
Agriculture	10.4%	10.9%	7.8%	8.5%
Industry	40.3%	23.7%	35.5%	36.4%
Services	49.3%	65.4%	56.7%	55.1%

Source: Author's calculations based on CIS database

In the Western CIS countries there were no exceptions to the general decreasing trend in the share of GDP coming from agriculture (**Table 6.11**). In 2008 the average share had dropped below 10%. On the other hand industry still plays a more important role in these countries than it does in the Western Balkans, especially in Belarus and Ukraine (40.3% and 35.5% respectively). The general trends for the country groups are biased again toward the Ukrainian data as Ukraine has a leading role in the Western CIS in terms not only of population, but also the magnitude of GDP.

Table 6.12. GDP composition by sectors in CIS Transcaucasia [value added, %]

Sectors/countries	Armenia	Azerbaijan	Georgia	Averages
1993				
Agriculture	44.9%	28.4%	70.1%	54.1%
Industry	37.0%	33.8%	9.4%	23.1%
Services	18.1%	37.8%	20.5%	23.8%
2000				
Agriculture	25.6%	17.1%	21.9%	22.8%
Industry	35.4%	45.3%	18.4%	29.8%
Services	39.0%	37.6%	59.7%	47.4%
2008				
Agriculture	17.8%	6.3%	10.3%	13.4%
Industry	45.0%	69.9%	19.0%	41.9%
Services	37.2%	23.8%	70.7%	44.7%

Source: Author's calculations based on CIS database

For CIS Transcaucasia the data shown in the table paints and ambiguous picture (**Table 6.12**). It shows the importance of agriculture in terms of GDP having decreased since the time of the transition, especially in Georgia where it has declined by 60% over the past 16 years. On the other hand the importance of the industrial sector increased remarkably in Armenia and especially in Azerbaijan and became the dominant sector of the economy. In Armenia this growth was driven by the construction industry, while the reason for its expansion in Azerbaijan was the oil sector with the opening of the Baku-Tbilisi-Ceyhan pipeline. According to the Statistical Yearbook of Azerbaijan the GDP growth compared to the previous year was 26.4%, 34.5% and 25.0% between 2005 and 2007 (SSC, 2008). Georgia

has followed the general route of development and reached one of the highest shares of services in the GDP on a value added basis.

The best indicators on the economic impact of transition are trends in rural income generation and progress in family incomes. Unfortunately, reliable data is not available, but it is a general phenomenon that the progress of rural incomes lags behind the overall country level growth. According to some studies which have analyzed the impact of the market transformation process on income (e.g., Verhoeven et al., 2009)⁹, the real losers of the market transformation process can be found in the rural areas where poverty and unemployment are at significantly higher levels than in urban areas.

⁹ This study analyzed Czech Republic, Hungary, Poland, Russia, and Slovakia with covering a period from 1991 to 2002.

7. Priority issues in the selected countries

Apart from those presented above, there are some other priority issues in the selected countries at various different levels. In this study four issues will be analyzed:

1. Land reforms and their actual situation.
2. Support systems, from which agricultural performance cannot be separated.
3. Food policy and safety, which are very important in the countries of transition.
4. Education and human capital as the key areas of future opportunities.

The countries will be analyzed in the same groups as before starting with the Western Balkans, then Western CIS and finally CIS Transcaucasian countries.

7.1. Land reform

Land reforms can be described by explaining some basic components like the possibility of private ownership (whether there are any restrictions or not), allocation strategies, transferability (freedom in buying/selling, leasing options), type of farm organisations (which was analyzed earlier) and the watershed date for individualisation. This sub-chapter follows this structure for the country groups. **Table 7.1** summarises these elements for the Western Balkan countries.

Table 7.1. Differences in implementation of land reform in Western Balkan countries

Countries	Potential private land ownership	Allocation strategy	Transferability	Farm organisation	Watershed date for individualisation
Albania	All	Plots	Buy/sell, lease	Individual	1991
BiH	All	Plots	Buy/sell, lease	Individual + corporate	1991
Croatia	All	Plots	Buy/sell, lease	Individual + corporate	1991
Montenegro	All	Plots	Buy/sell, lease	Individual + corporate	1992
Serbia	All	Plots	Buy/sell, lease	Individual + corporate	1992
FYROM	All	Plots	Buy/sell, lease	Individual + corporate	1991

Source: Author's composition

As can be seen from the table, the Western Balkan countries have all followed similar land reform methods. There is no limit to potential private ownership, the same allocation strategy was used and it possible to buy, sell or lease land in every country. In all of the countries - with the exception of Albania - individual farms dominate and co-exist with former collective (corporate) farms. The watershed date for individualization was around the early 1990s even in Bosnia and Herzegovina, where the constitutional background was finalised only after the end of the war in 1998. Since then, remarkable changes have taken place as the share of privatised land was between 80% (FYROM) and 95% (Albania) even in 2004 (Arcotrass, 2006). The way that privatization was carried out was also the same, as land was given back to its former owners. The only exception was Albania, which adopted "land to tiller" strategy.

That is, the land was given to those persons who worked it without any compensation. This is similar to the CIS countries, especially to Armenia and Georgia (Lerman et al., 2002).

The presence of agricultural enterprises in the production mix in most of the countries is a general phenomenon in the transition countries that is called the dual production system. This duality is a part of the historical heritage of agriculture from the communist times. But their share in land use has continuously decreased over the years. The importance of individual production is highest in Albania where its share surpassed 90% by 2004.

Table 7.2 gives a picture of the status of agricultural reforms in the Western Balkans. These numbers refer not only to the state of land reform, but also market conformity, the policy environment, the privatization process, rural financial systems and the institutional framework. According to this composite index most of the analyzed countries are at quite a high level and much closer to market economy than to command economy (state control, state owned industries etc.) in every sense.

Table 7.2. Status of agricultural reforms in the Western Balkans

Countries	World Bank's land reform index
Albania	7.8
BiH	6.4
Croatia	7.8
Serbia and Montenegro	7.0
FYROM	7.2
Average point	7.2

Source: Csaki – Kray (2005)

The countries' average is 7.2, which is very high and all the countries - except Bosnia and Herzegovina where the actual state of the institutional framework has received low points - can be found in the first third of World Bank's analysis on CEE¹⁰ and CIS countries.

Generally the present state of affairs in land reform, and especially land privatisation, is not a very pressing issue any more in the Western Balkans as all the countries have reached a relatively high level. However, there are some other problems which have to be addressed by these countries. The first of these is high level of land fragmentation; small average sizes in line with a huge number of parcels. Low-scale production seems to be the bottleneck of the Western Balkan's agriculture and it is closely related to competitiveness. Consolidation of farm parcels should be a key focus for agricultural policies. For example, in Albania the governmental tool in this respect is the promotion of leasehold (World Bank, 2006). One of the most significant obstacles is the lack of, or insufficient level of, land registers which is an absolutely necessary part of a well functioning land market.

As EU accession is a main aim for these countries, it is necessary for them to build an EU conforming, relatively up-to-date land database. This is especially true in Bosnia and Herzegovina. The key agricultural area in terms of EU membership is the implementation of CAP¹¹ which requires not only a sufficient institutional background but also readily available and reliable data sources (for example for the FADN¹² system).

¹⁰ Central and Eastern European

¹¹ Common Agricultural Policy

¹² Farm Accountancy Data Network

Regarding the CIS countries, one of the major lessons to be learned from the analysis is the provable link between better agricultural performance and how far they went on the path to reform (Lerman, 2008). This was demonstrated in chapter 5 with detailed data for Ukraine, where the effectiveness of household plots is much higher than that of the large-scale holdings despite their very small size. In addition to this, the study made by Zimmermann and Kuhn (2006) pointed out that the average profit per farm was highest for small farms rather than for medium-sized and large farms in Ukraine. The same can be observed in Moldova, where small individual farms are on the whole more productive and more efficient than the large corporate farms (Lerman – Cimpoies, 2006).¹³ **Table 7.3** summarises the differences in implementation of land reforms in Western CIS countries.

Table 7.3. Differences in implementation of land reform in Western CIS

Countries	Potential private land ownership	Allocation strategy	Transferability	Farm organisation	Watershed date for individualisation
Belarus	Household plots only	None	None	Corporate + individual	*
Moldova	All	Shares to plots	Buy/sell, lease	Individual + corporate	1998
Ukraine	All	Shares to plots	Buy/sell, lease	Individual + corporate	2000

* In Belarus individual farms began to be created in 1992, but the process of individualisation has not taken off as in other countries.

Source: Lerman (2008)

The overall picture is less homogenous than that seen in the Western Balkans. The most conspicuous thing is the overall delay in individualisation. This has not really started at all in Belarus. Belarus is a general exception as private ownership is extended only to the household plots, there is no allocation strategy, and transferability and corporate farms dominate agriculture both in terms of numbers and output. Moldova and Ukraine have followed the same path and their land reform can be characterised by the same parameters. Unlike Belarus, agriculture in these two countries is dominated by individuals, both in terms of land use and production. Although buying/selling and leasing are legally possible in Ukraine, there is a moratorium on purchase and sale of agricultural land, the decision behind which was made on a political basis and has no economic reason (Demyanenko, 2006).

¹³ Corporate farms control 50% of land and generate less than 30% of output (Lerman – Cimpoies, 2006)

The following table gives an overview of the status of agricultural reforms (**Table 7.4**).

Table 7.4. Status of agricultural reforms in the Western CIS

Countries	World Bank's land reform index
Belarus	2.6
Moldova	6.0
Ukraine	6.2
Average point	4.9

Source: Csaki – Kray (2005)

The points representing the status of agricultural reform are lower than in the Western Balkan countries. Moldova and Ukraine can be found in the second third of the list of CEE and CIS countries, while Belarus is second to last on this list. This point is the lowest among the selected countries and is due to an underdeveloped institutional framework.

Land reform as a whole is still an important issue in Belarus, and requires important governmental action. The World Bank's reform index has highlighted that the country's economy is closer to a command economy than to market economy. It was already demonstrated by Lerman (2008) that agricultural development in the CIS countries was driven by policy reforms and the recovery of production was also directly linked to them. In Ukraine the further improvement of the private sector is necessary in order to increase not only the output but also the competitiveness of the agricultural sector. The land market in Moldova is similar to that in the Western Balkans with high fragmentation and low average sizes. Agricultural policy should focus land consolidation, which is a major issue in terms of competitiveness.

CIS Transcaucasia is the most homogenous among the country groups, as all the major elements of land reforms that have been implemented were the same (**Table 7.5**).

Table 7.5. Differences in implementation of land reform in CIS Transcaucasia

Countries	Potential private land ownership	Allocation strategy	Transferability	Farm organisation	Watershed date for individualisation
Armenia	All	Plots	Buy/sell, lease	Individual	1992
Azerbaijan	All	Plots	Buy/sell, lease	Individual	1996
Georgia	All	Plots	Buy/sell, lease	Individual	1992

Source: Lerman (2008)

Only Azerbaijan implemented the legal basis of individualization at a later date, a delay which resulted in a slower recovery in terms of agricultural output. However, this did not become a big problem as the share of agriculture as a percentage of GDP is lowest in Azerbaijan when compared to the two other CIS Transcaucasian countries. Although agriculture is losing its importance it should be kept in mind that it still functions as a social safety net especially in the poor rural areas. CIS Transcaucasian countries followed a different path to reform than the Western CIS countries, which resulted in private, owner-operated farms instead of mix of corporate and individual farms (Dudwick et. al., 2007). In these countries there was a strong political will to privatize and to move toward a market economy (Giovarelli – Bledsoe, 2001). This has resulted in a dominant role for individual producers in terms of both land use and production.

This country group is located between the two other two in terms of agricultural reforms, with relatively high scores (**Table 7.6**). Armenia has the highest land reform index, while Georgia has the lowest in this group. The latter is because of the low points of institutional framework.

Table 7.6. Status of agricultural reforms in CIS Transcaucasia

Countries	World Bank's land reform index
Armenia	7.8
Azerbaijan	6.6
Georgia	6.0
Average point	6.8

Source: Csaki – Kray (2005)

Land reform was a key issue of these countries. Individual farms can be characterised by higher efficiency and yields and play an essential role in rural areas (subsistence, additional income sources, etc.). The future focus of further land reform would be the strengthening of the social aspects of the agricultural policies besides land consolidation.

7.2. Support systems

The financial possibilities of national budgets are increasingly important elements for measuring agriculture. Although agriculture is playing a less important role in the national GDP it is still receiving significant budgetary support. Its importance is highlighted by the location of the countries. Within the groups neighbouring countries have markets for agricultural products which are close to each other. In these countries greater support causes distortions both in terms of production and trade implicating competition between budgetary opportunities. This chapter tries to demonstrate this with the limited data that is available (especially limited for the CIS countries). Unfortunately national statistics do not contain agricultural support, and OECD has calculated PSE¹⁴ only for Ukraine from the selected countries. However, there are no long time support series for Western Balkan countries either.

As the Croatian and Serbian economies are the most significant ones in the Western Balkans, it is to be expected that those countries would give the highest amount of support for agriculture. Although the absolute value is important, the share as a percentage of GDP is also important because it illustrates the importance of agriculture at the governmental level (**Table 7.7**).

¹⁴ Producer Support Estimate

Table 7.7. Agricultural support in the Western Balkans [Mio EUR]

Countries	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP
	2003		2005		2007	
Albania	53.0	1.0%	34.6	0.5%	43.2	0.5%
BiH	17.9	1.1%	25.0	1.6%	46.0	2.7%
Croatia	290.6	1.1%	N/A	N/A	478.7	1.7%
Montenegro	8.3	0.5%	8.1	0.4%	12.5	0.4%
Serbia	162.1	0.9%	150.4	0.7%	201.1	0.7%
FYROM	14.5	1.3%	23.8	2.2%	N/A	N/A

Source: Author's calculations based on national ministries' data

The absolute numbers refer to the size of the national economies and the first two on the list are always the same; namely, Croatia and Serbia. All the other countries are able to give much less support to agriculture. However, in terms of percentage of GDP, the figures are remarkably high (between 0.4% and 2.7%) in each given year. This is especially true if we take the EU-27 as a benchmark, where the budget of the CAP in the share of GDP started to decline in the mid-1990s and went below 0.4% in 2007. The relatively high share in Croatia can be explained by the preparation for accession to the EU because after accession some of the support will have to be abolished. On the other hand, higher levels of governmental support are essential for the agriculture in these countries as private investments are insufficient and there is a lack of available loans, especially in the poorest rural areas.

Estimations regarding the level of agricultural support in the CIS countries are more limited due to the lack of available data. In case of Western CIS, data for Moldova is missing (**Table 7.8**).

Table 7.8. Agricultural support in the Western CIS [Mio EUR]

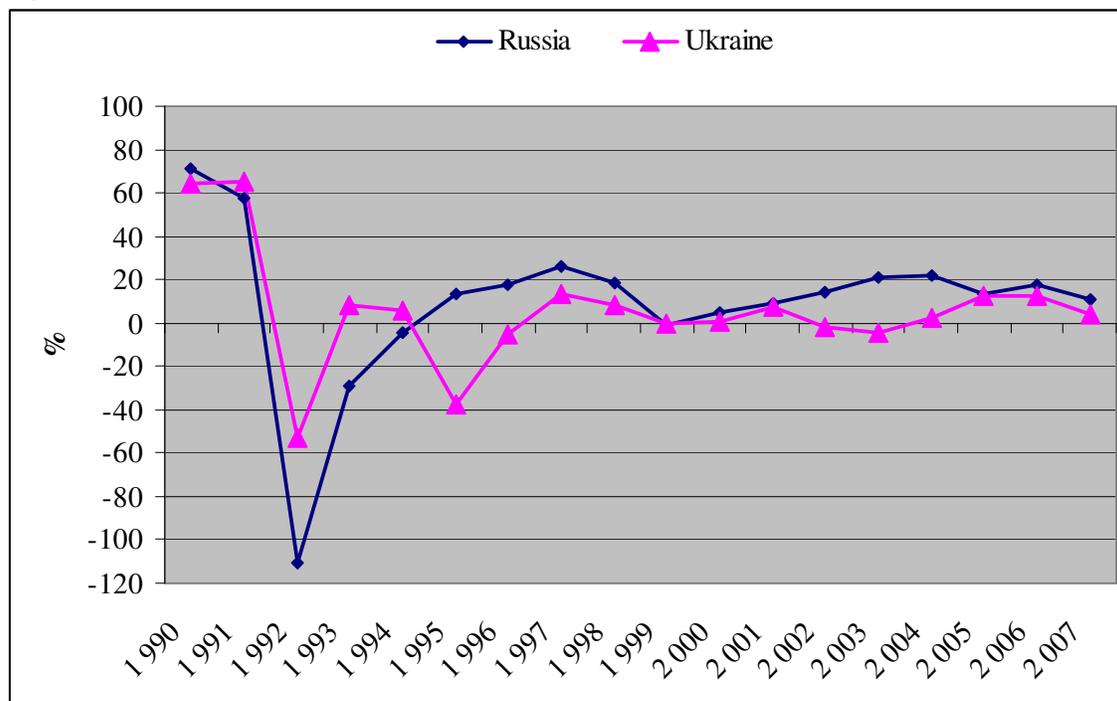
Countries	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP
	2003		2005		2007	
Belarus	N/A	N/A	585.5	3.7%	930.5	4.3%
Moldova	N/A	N/A	N/A	N/A	N/A	N/A
Ukraine	1090.6	2.5%	1265.6	1.9%	1964.4*	2.4%*

* Data for 2006

Source: World Bank (2009) for Belarus, Nivyevskiy (2006) for Ukraine

From the table it can be seen that the Governments of both Ukraine and Belarus provide more support to agriculture than do their equivalents in the Western Balkans. The share is fluctuating at around 2% of GDP in Ukraine and around 4% in Belarus. In relation to the extent of agriculture in Belarus, the Government gives a relatively high amount of support, which is very close the spending on health care. In order to gain an additional insight into this area, the evolution of PSE in Ukraine will be presented using Russia as a benchmark (**Figure 7.1**).

Figure 7.1. PSE values in Ukraine and Russia



Source: Author's composition based OECD database

From this figure a weak correlation can be seen between the two lines, but excluding the dramatic effect of the transition, the Russian support system seems to be more stable. It is strengthened by the huge amount of national resources which provides a basis for the expansion of governmental spending. According to the OECD database, the value of PSE is continuously decreasing in the European Union but it is still higher than the Russian or Ukrainian figures (25.5% in 2007).

In case of CIS Transcaucasia there is no reliable data for Georgia, but the percentage of agricultural budget in terms of GDP is lower than in the two other Caucasian countries (**Table 7.9**).

Table 7.9. Agricultural support in CIS Transcaucasia [Mio EUR]

Countries	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP	Agricultural budget	As a share of GDP
	2003		2005		2007	
Armenia	30.3	6.3%	24.7	3.2%	62.2	4.3%
Azerbaijan	N/A	N/A	N/A	N/A	752.7	3.3%
Georgia	N/A	N/A	N/A	N/A	N/A	N/A

Source: Author's calculations based on national ministries' data

In Armenia the agricultural budget increased and was about 4.3% of GDP in 2007. In **Azerbaijan** it is more or less stable at around 3-4% of the GDP but due to the GDP boom in recent years the total amount increased enormously. Although it is a small country, its agricultural budget is (probably) the third largest after Belarus and Ukraine. This is the positive effect on the agriculture resulting from oil-driven growth.

7.3. Food policy and safety

7.3.1. Relevance of food in households' disposable income

Food itself is a very important topic in these countries as much of an average household's budget is spent on food and beverages. This is true both Western Balkan and CIS countries, where food security it is often translated into self-sufficiency. The amount of household expenditures spent on food and beverages has shown a continuous decrease although it is still high. The following table provides details for the Western Balkan countries (**Table 7.10**).

Table 7.10. Share of household expenditure on food and beverages in the Western Balkans

Countries	Food	Alcoholic beverages and tobacco	Together
Albania	N/A	N/A	57.8%
BiH	32.0%	3.2%	35.2%
Croatia	33.9%	4.1%	38.0%
Montenegro	42.5%	4.0%	46.5%
Serbia	39.0%	4.4%	43.4%
FYROM	39.4%	3.9%	43.3%

Source: USDA Economic Research Service, national statistics, Sisevic (2009) for Montenegro

The share of household expenditures on food and beverages is between 35.2% (Bosnia and Herzegovina) to 57.8% (Albania). One should keep in mind that behind the averages there are enormous differences as households with the lowest incomes spend higher percentage of their incomes on food and save in other areas such as clothing. These aggregated values reflect more or less the developmental level of the countries; in poorer countries expenditure on food and beverages is higher. As a comparison, the average for the EU-27 is 19.4% with higher values for the new member states except Cyprus and Slovenia (Eurostat, 2008). However, in Romania the figure is 50%, which is the highest among all the member states.

Household expenditure on food and beverages in the Western CIS countries is higher than in the Western Balkans. This is especially true in Belarus (**Table 7.11**).

Table 7.11. Share of household expenditure on food and beverages in Western CIS

Countries	Food	Alcoholic beverages and tobacco	Together
Belarus	47.3%	6.3%	53.6%
Moldova	44.4%	2.8%	47.2%
Ukraine	43.1%	6.4%	49.5%

Source: USDA Economic Research Service, national statistics

These numbers are more homogenous, all of them being around 50%. What is remarkable is the above average percentage spent on of alcoholic beverages and tobacco in Belarus and Ukraine.

Table 7.12. Share of household expenditure on food and beverages in CIS Transcaucasia

Countries	Food	Alcoholic beverages and tobacco	Together
Armenia	N/A	N/A	61.5%
Azerbaijan	51.6%	2.4%	54.0%
Georgia	N/A	N/A	39.5%

Source: USDA Economic Research Service, national statistics

The figures for the CIS Transcaucasian countries are a very heterogeneous, starting from 39.5% (Georgia) and reaching 61.5% in Armenia (which is the highest value among the selected countries) (**Table 7.12**). This is surprising as almost two thirds of an average household's total dispensable income is spent on food, beverages and tobacco.

Besides the distribution of household expenditures, one of the most important elements of food policy and safety is connected to WTO, namely Sanitary and Phytosanitary Standards (SPS).

7.3.2. Trade connections

A detailed overview on trade issues was provided in chapter 3. This sub-chapter is dedicated to the analysis of the trade connections of the selected countries. This knowledge gives a significant portion of the background on food safety issues. **Table 7.13** summarizes the main trading partners of the Western Balkans.

Table 7.13. Breakdown of the Western Balkans' trade by main destinations

Countries	Major export partners	Major import partners
Albania	EU-27 (79.7%), Serbia (8.3%), FYROM (2.9%)	EU-27 (60.7%), China (7.4%), Turkey (6.0%)
BiH	EU-27 (55.0%), Croatia (17.2%), Serbia (15.1%)	EU-27 (48.0%), Croatia (17.1%), Serbia (10.6%)
Croatia	EU-27 (60.9%), BiH (15.4%), Serbia (5.5%)	EU-27 (64.1%), Russia (10.4%), China (6.1%)
Montenegro	N/A	N/A
Serbia	EU-27 (64.3%), BiH (12.2%), Montenegro (11.7%)	EU-27 (53.3%), Russia (15.3%), China (7.5%)
FYROM	EU-27 (65.1%), Serbia (19.1%), Croatia (4.9%)	EU-27 (49.5%), Russia (12.3%), Serbia (8.6%)

Source: WTO database

As can be seen from the table, the European Union is the main partner of the Western Balkan countries. Percentages range between 55% (Bosnia and Herzegovina) and 79.7% (Albania). For imports these values range from 48% (Bosnia and Herzegovina) to 64.1% (Croatia).¹⁵ Other main export partners are the neighbouring countries, while in terms of imports Russia, China and Turkey are also important trade partners. The countries are required to implement EU rules on food hygiene and official quality control as an essential part of the candidacy and possible accession.

Table 7.14 sums up the main trade partners of the Western CIS countries.

Table 7.14. Breakdown of Western CIS trade by main destinations

Countries	Major export partners	Major import partners
Belarus	EU-27 (43.9%), Russia (32.2%), Ukraine (8.5%)	Russia (59.8%), EU-27 (21.6%), Ukraine (5.4%)
Moldova	EU-27 (51.5%), Russia (19.7%), Ukraine (9.0%)	EU-27 (43.0%), Ukraine (17.1%), Russia (13.6%)
Ukraine	EU-27 (27.1%), Russia (23.5%), Turkey (6.9%)	EU-27 (33.8%), Russia (22.7%), Turkmenistan (6.6%)

Source: WTO database

The trade partners here are quite similar to those seen in the Western Balkans. However, the significance of the European Union is not as great. What is remarkable is the importance of the Russian markets in both directions. The reason for this is simply the location of these countries as they are situated between the European Union and the Russian Federation.¹⁶ Under the given circumstances not only the proper knowledge of EU regulations and rules, but also that of the Russian ones is essential.

¹⁵ However the WTO trade database does not contain detailed data on Montenegro, but its export and import is also dominated by the European Union and Serbia.

¹⁶ Of course the lack of language barrier is also important.

Table 7.15. Breakdown of CIS Transcaucasian trade by main destinations

Countries	Major export partners	Major import partners
Armenia	EU-27 (54.6%), Russia (20.3%), Georgia (7.3%)	EU-27 (29.7%), Russia (20.4%), China (9.2%)
Azerbaijan	EU-27 (56.5%), USA (12.6%), Israel (7.6%)	EU-27 (28.4%), Russia (18.8%), Turkey (11.3%)
Georgia	EU-27 (22.3%), Turkey (17.6%), Azerbaijan (13.7%)	EU-27 (27.4%), Turkey (15.1%), Ukraine (10.8%)

Source: WTO database

The importance of the EU and Russian markets are more or less the same in the CIS Transcaucasian countries (**Table 7.15**). Although they have no common border with the European Union, they intend to have tight connections with the EU market. The advisable food safety strategy is more or less the same as for the previous CIS country group.

7.3.3. Food safety rules and their implementation

As the European Union is an important trading partner of most of the countries discussed here, an exact knowledge of the EU's food safety rules is essential. The EU has applied the WTO agreement on SPS (Sanitary and Phytosanitary Measures). This agreement sets out the basic rules but WTO members have the right to set out their own standards¹⁷ although these five elements are necessary (WTO website):

- Harmonization – harmonization of SPS measures on the basis of international standards (the FAO/WHO Codex Alimentarius Commission for food; the International Animal Health Organization for animal health and the FAO's Secretariat of the International Plant Protection Convention for plant health).
- Transparency – governments are required to notify other countries of any new or changed SPS measures which could affect trade.
- Scientific basis – SPS Agreement allows countries to set their own food safety and animal and plant health standards but they should be scientifically based.
- Non discrimination – foreign products should be treated no less favorably than domestic products.
- Equivalence – members shall accept the sanitary or phytosanitary measures of other members as equivalent, even if these measures differ from their own.

Table 7.16. WTO status of the selected countries

WTO members	WTO observers*
Albania (2000), Armenia (2003), Croatia (2000), Georgia (2000), FYROM (2003), Moldova (2001), Ukraine (2008)	Azerbaijan, Belarus, Bosnia and Herzegovina, Montenegro, Serbia

* Observers must start accession negotiations within five years of becoming observers.

Source: WTO website

¹⁷ Its operation in practice: if an exporting country can demonstrate that the measures it applies to its exports achieve the same level of health protection as in the importing country, then the importing country is expected to accept the exporting country's standards and methods (WTO website).

The importance of WTO's SPS measures is underlined by the WTO status of the selected countries. Albania, Croatia and Georgia joined to the WTO in 2000. **Table 7.16** gives an overview of the WTO status of the selected countries.

In the next few years the present observers will become members; therefore, they also have to comply with WTO rules on sanitary and phytosanitary standards as soon as possible as non-compliance can be an obstacle to successful participation in international trade for transition countries (World Bank, 2007).

In light of the location and membership negotiations between Western Balkans and the EU, food safety issues are of increased importance; being a question of market access and export competitiveness. The long term objective for these countries is the development of an EU-compliant food safety system, while in the short run they have to develop a lean, EU-compatible regulatory and institutional framework for food safety (Lampietti et. al., 2009). The introduction of higher food standards in line with a strict controlling system should be a part of this. However, progress in adopting these measures seems very limited (ICO, 2008). A special pricing system, which encourages farmers to produce high-quality products, could be an element of it (EBRD, 2007). In addition, the small-scale farms do not often have sufficient resources for applying and maintaining food security systems. According to FAO (2007), realistically, less than 10% of farmers produce enough to compete on a higher level and to invest in expensive new technologies.

Although the land has been privatized in the Western Balkans, the related services such as veterinary practices and extension and quality testing remained in state hands (Bogdanov et. al., 2007). Moreover, inspection is regulated a number of different authorities, which makes organisation and harmonisation more difficult (ICO, 2008). However, remarkable steps have been made. There are independent food safety agencies in some countries (Croatia, Bosnia and Herzegovina, and FYROM) some of which have already been acknowledged by the EU. For example the Croatian Food Agency received its 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 has not been established (Rasavac – Cuk, 2009). However, it should be kept in mind that the establishment of food safety agency alone cannot solve the food safety problems if it does come with sufficient resources like qualified and well-paid staff, financial resources for testing, well-equipped laboratories with satisfactory capacities etc. The role of international donor organisations is essential.

The former soviet was characterized by an extensive system of laboratories. However, these have collapsed since the transition (World Bank, 2007). The new, independent countries had to cope with a significant drop in production and had no resources, even for maintaining the level of food safety infrastructure. The laboratories are designed for the former soviet food safety standards called GOST¹⁸. Due to its nature and the fact that it was state controlled, the GOST system is very inflexible and provides the opportunity of corruption, especially as even the inspection services are unfunded. There tend to be too many inspections and these are very costly. In some of the countries the quality of the water-supply and sewage treatment infrastructure are the main reason for the spread of some diseases. Therefore, food safety

¹⁸ GOST is acronym of gosudarstvenny standart, or "state standard." GOST standards were originally developed in the Soviet Union and are now administered by the Euro-Asian Council for Standardization, Metrology, and Certification, a standards organization chartered by the Commonwealth of Independent States. GOST-based standards are not WTO compliant and are not recognized by most of the world's trading countries (World Bank, 2007).

should be started at the level of basic infrastructure. Georgia is heavily affected by such factors; the rate of botulism there is the highest in the entire world (Dunn, 2008). CIS countries should focus on prevention, independent control, and cooperation between the private and public sector. However, this has been hampered by a small-scale farm system in most of the countries (as in the Western Balkans).

Regarding the CIS countries, Russian membership would accelerate the implementation process of SPS. Due to the fact that Russia still uses the GOST system, it is also in use in most of the CIS countries. For example, Armenia reported that it would withdraw GOST standards, but the inspectors still follow them (World Bank, 2005/a). The main differences between the two systems are their approaches: SPS is based on private control while the central element of GOST is governmental control. One should keep in mind that the implementation of the WTO-compliant system requires strong political leadership and consensus among the stakeholders and depends not only on juridical actions but also time and money (World Bank, 2007). It requires trained staff, new methods of testing, and independent laboratories that meet Good Laboratory Practice levels (EU audit levels). There is no strong driving force of the implementation of the WTO system where the intra-CIS trade is stronger. This process has also been influenced by the global crisis which has strongly affected the available financial resources. However, these markets are declining; for example, with the extension of the European Union. The last round has sensitively affected Moldova as its market access has been reduced by the accession of Romania.

From the CIS countries analyzed, Belarus and Ukraine are in a better position due to their resources. For them full harmonization with, and implementation of, WTO standards could be the aim in line with consolidated labs (World Bank, 2007). The analyzed smaller CIS countries should selectively carry out these actions in light of their limited resources.

7.4. Education and human capital

Education is a key issue for the future prospects of agriculture. Education is used in the widest sense as it is one of the most powerful tools in changing mentality of farmers. The common characteristic of both the Western Balkan and CIS countries is the “large-scale” oriented method of education. Large-scale farming was very important before the transition, but this importance has decreased in different ways in the selected countries. Earlier chapters have given detailed analyses of this. Although the situation has changed in every country, not enough time has passed since the transition for the education systems to meet the new challenges posed by changes in production, distribution and markets systems. Literary evidence can be found in every country; for example, this was well demonstrated in Serbia by Bogdanov et. al. (2007). The former large-scale technological intensive production has lost its importance under the radically changed circumstances. The need for a small-scale, mostly semi-subsistence agricultural sector is totally different, with practice-based knowledge being the focus.

After the transition, the educational system in CIS countries almost collapsed. According to one of the World Bank’s reports (World Bank, 2004), CIS countries have found themselves in a crucial situation characterised by poor conditions and inefficiently allocated resources. The situation of the Transcaucasian countries (and Moldova) is very similar to that seen in the Western Balkans, as they almost entirely privatised the land. On the other hand the former collectivisation had a greater impact on the farmers’ mentality and these countries still have more intensive connections with Russia. Market channels are also fragmented, which makes it

difficult to sell agricultural products at the right price (World Bank, 2005/b). In Belarus and Ukraine the present production system is closer to the former Soviet one; therefore, the problem of an educational system biased toward large-scale enterprises is less.

Acquiring a sufficient level of education requires highly qualified staff. After the transition a lack of financial resources became one of the major problems, and this greatly affected the educational system. The selected countries spend less on education and especially on agricultural education than is required in order to improve the level of education. Without investment there is no chance of keeping the present academic staff.

In addition, although land and farms were privatised to varying extents, the situation of market structures and institutions are still undeveloped (World Bank, 2005/b). However, the fragmented production structure means that, realistically, less than 10% of producers have sufficient production surpluses to compete in different markets and to re-invest in new technologies (FAO (2007).

The past experiences of collectivisation are still in the mind of farmers, and this continuously hinders cooperation between agricultural stakeholders. The meaning of cooperation almost always means the type seen on the former (socialist) collective farms. Moreover, farming has a negative image in some countries, such as Croatia (FAO 2005). However new types of producers organisations are dominating some agricultural sectors in the European Union. The EU is the main market for Western Balkan countries and has an increasing share from the in terms of the CIS countries' exports as well. Lack of cooperation weakens the chance of both horizontal and vertical coordination. Therefore promotion of cooperation is just as important an issue as education. Paradoxically, informal cooperation is widespread and contributed to the establishment of hundreds of farmer's organizations and cooperatives in the Western Balkans (FAO 2007).

Fragmented production structures require decentralised services (advisory, financial, marketing, etc.). Information is especially important, and not only quantity and quality, but also availability. Therefore, special tools of information services should be strengthened in all these countries and not only the Internet-based form, but also face to face consultations with the agricultural stakeholders. According to the FAO (2007), farmers mainly rely on local sources and rarely view the government as a supportive institution for development in the Western Balkans. Channels and tools commonly used in the market economies are still on an insufficient level in the selected countries.

8. Summary and conclusions

In the *first chapter* the major resources of agriculture were examined, and based on the results the following could be summarized:

1. In absolute terms both the agricultural area and the agricultural employment were the most significant factors in Ukraine and this country has already had a relevant impact on the world-wide agricultural markets.
2. The share of arable land was the highest in Ukraine (79%) while in Georgia this number was only 18%.
3. Among the three selected regions the share of the arable land was the highest (74%) in the Western CIS countries, while the lowest share was in the CIS Transcaucasian countries (29%).
4. Between 2003 and 2007 the size of the agricultural area decreased significantly in Croatia, Georgia, Belarus, and FYROM, while Armenia and Azerbaijan showed a growth.
5. The share of agricultural employment changed in a different way in the countries during the selected period. With a value of 59% agricultural employment was the highest in Albania while the least rural population (2%) lived in Montenegro in 2007.

The *second chapter* gave a general overview about the agricultural performance:

1. The most important role of agriculture in the GDP was in Albania (21%) and Armenia (18%) and only Croatia and Azerbaijan (both 6%) tended to show a typical average of a developed country in 2007.
2. From 1992 to 2007 the gross agricultural output measured in international dollars increased in Armenia, Azerbaijan, Albania and Bosnia and Herzegovina; it decreased in Moldova, Ukraine and Georgia while in the other countries this value was on the same level.
3. The average cereal output of the regions decreased in the Western Balkans and in the Western CIS countries and only the CIS Transcaucasian countries increased their output between 1992 and 2007.
4. The average meat output – similar to the cereals – decreased among the Western CIS and Western Balkan countries, while the CIS Transcaucasian region could show moderate growth.
5. The level of milk production increased everywhere except the Western CIS countries.
6. Cereal yields showed a huge difference in the countries during the examined period: the highest number was observed in Croatia (4.56 tons/hectare in 2007) while the smallest was in Moldova (0.97 tons/hectare in 2007).

As a summary of the agricultural trade issues, from the *third chapter* we can jump to the following conclusions:

1. Nominal values of both agricultural exports and imports increased between 1998 and 2007 in the examined countries.
2. The two biggest agricultural exporters (Ukraine and Belarus) were also the two biggest importers.
3. Countries with the smallest export values (Albania and Armenia) were relatively significant importers so their trade balance was significantly negative.
4. Only Ukraine, Moldova and Serbia had a surplus in their agricultural trade balances. All the other countries were net importers of the agricultural goods and therefore they had deficits.

From the *fourth chapter* – which deals with the price development of the most important products – the following statements can be made:

1. In the selected countries the three most common produced cereals were the wheat, maize and barley. The price of the several cereals was very fluctuating during the years.
2. Beef and pork were everywhere were in the TOP3 in all the countries. The producer prices of both beef and pork were very high in Albania.
3. The situation in Georgia regarding all the products was very different compared to the other countries: the highest prices were observed in 1993 and these prices showed a decreasing tendency.
4. Among the milk products cow milk was produced in the largest quantity in every selected country. Milk prices showed an increasing tendency in all the countries except Georgia.

An overview of some farming issues were given in the *fifth chapter*. The selected countries were divided into two major groups and the results were made on this basis:

1. The majority of the agricultural producers in the Western Balkans are small. According to the average size, Albanian farms are the smallest with 1.1 ha, while Bosnian ones are the largest at 4.7 ha.
2. The size problem of these countries is expressed by the huge number of land parcels, which makes production more costly and less efficient. Moreover, this type of land distribution is one of the most important barriers to a well functioning lease market.
3. The structure of agriculture in the CIS countries is totally different to that seen in the Western Balkan countries. It has very special (unique) characteristics with not only private farms and enterprises, but also household plots.
4. There are also big differences between the CIS countries. Agricultural enterprises have a moderate ratio in Moldova and Ukraine and very high one in Belarus, while on the other hand CIS Transcaucasia can be characterised by the overwhelming dominance of private farms and households. The Caucasian countries chose a totally different form of agriculture from the soviet type of farming and switched quickly to individual property based agricultural production. Contrary to this, the old type of corporate farms more or less remained in the Western CIS countries.
5. Except Belarus and Ukraine, the average land sizes are very low and in some countries they are decreasing. Values are between 1.0 ha (Georgia) and 9.6 ha (Azerbaijan). In Belarus and Ukraine the average private farm sizes are quite large (59.1 and 102.1 ha respectively), however their share of the total UAA is relatively small.

The *sixth chapter* dealt with the analysis of the rural areas in terms of demographical and economic impacts:

1. In Albania, Bosnia and Herzegovina and Moldova the majority of the population is classified as rural (their share is above 50%). The lowest shares can be found in Belarus (25.7%).
2. The generally used phenomena of decreasing rural and increasing urban population can not be proved for all of these countries as the annual rate of urbanisation is negative in four of the countries (Armenia, Georgia, Moldova and Montenegro).
3. In the CIS Transcaucasian countries the share of the population below the poverty line was even higher in the urban areas. In general, poverty is a bigger problem in the CIS countries than in the Western Balkans.
4. The rate of 65+ people shows the magnitude of the ageing problem the countries are facing with. Rate of 65+ is between 7 (Azerbaijan) and 17 % (Serbia). Rate of

- pensioners shows the economic aspect of the ageing problem. Its rate has a higher range starting from 13.2% (FYROM) to 28.5% (Ukraine). In addition to this, 5 countries have negative natural increase rates (Belarus, Croatia, Moldova, Serbia and Ukraine). It predicts the growing tendency in the share of elderly populations in the long run. While Western CIS countries seem to be a dwindling society, CIS Transcaucasia has a growing population, in particular in Azerbaijan (11.7% natural increase rate).
5. Regarding economic impacts, the GDP composition by sectors is a commonly used indicator. Analyzing the GDP composition in the long run, a decreasing trend of agricultural contribution to the GDP can be identified. The agricultural contribution to the value addition of the GDP varies from around 6% (Bosnia & Herzegovina, Croatia and Azerbaijan) to 21.0 % (Albania). For Albania the share of agriculture in GDP was even higher than the share of industry in recent years. Another interesting phenomenon is the leading role of industry in Azerbaijan (69.9%) and Armenia (45.0%). The service sector plays a dominant role in every other country.
 6. According to some studies which have analyzed the impact of the market transformation process on the income, the real losers of the market transformation process can be found in the rural areas. Therefore, rural poverty and social problems are critically important agricultural priorities. This has been brought into even sharper focus by the recent global crisis.

The review of *priority issues* in the selected Western Balkan and CIS countries leads to remarkable results in four areas:

1. Regarding land reform, Western Balkan countries have followed similar methods of land reform, with no limit to private ownership, using the same allocation method and allowing both buying and leasing of the land. The dominance of individual farms in line with agricultural enterprises results in the dual production system. Based on the results of privatization and the World Bank's agricultural reform index, land reform is not an important issue. On the other hand land policy still has a long way to go starting with the very fragmented land structure and setting up EU-conforming, reliable and available land registers and information systems. In the given situation FAO could support small farmers with organising services, especially practical issues of organising non-producer cooperatives (marketing, secondary, etc.). Addressing land tenure issues would be also essential as one of the major tools of expanding the size of agricultural activities.
 In the Western CIS countries land reform has not finished and it is an important issue especially in Belarus where privatization has not really started. Although buying/selling and leasing is legally possible in Ukraine, there is a moratorium on purchase and sale of agricultural land. In Moldova, land consolidation should be the key area of agricultural policy. In addition to the above mentioned FAO interventions, contributions towards the establishment of a well-functioning land market would be a necessary action in the part of FAO. There are lots of good examples; however, they could fully fit the specific conditions and traditions of the respective countries.
 The characteristic of land reform in Transcaucasian CIS is almost the same as in the Western Balkans; therefore, it is not an important issue in itself. However, agricultural policy should deal with fragmented land structure. For FAO the same policy would be followed for this country group as was summarised for the Western Balkan countries.

2. Although agriculture is playing a less important role in national GDP, it is receiving significant budgetary support. Concerning support systems, the absolute numbers refer to the size of the national economies in the Western Balkans. Here the top two countries are always Croatia and Serbia. The share of agricultural support in terms of GDP is higher than the EU-27 average. This ratio is even higher for Ukraine and most of the Transcaucasian CIS countries, while significantly higher in Armenia and Belarus. Higher net investment rates per agricultural worker led to great success in reducing rural problems like hunger and rural poverty (FAO, 2009). However, the size of the agricultural budget itself does not give any information on its efficiency. Governmental expenses on agriculture have positive effects if they boost investment and contribute to agricultural productivity (Swinnen – Van Herck, 2010). Generally, investment friendly environments have significant positive effects on the agricultural sector. In a frame of a special assistance process, FAO would provide some best practices for the different countries on effective policies and efficient programs together with a cost-benefit analysis.

3. Food itself is a topic of focus for these countries, as a large proportion of an average household's budget is spent on food and beverages. This is a general phenomenon of both Western Balkan and CIS countries and food security is often translated into self-sufficiency. Albania aside, the share of self-sufficiency is below 50% in the other Western Balkan countries. This value is higher for Western CIS and fluctuates widely in Transcaucasian CIS. In Armenia it reaches almost two thirds of the total dispensable income of the average household. Regarding food safety, an overview of trade connections is essential. A bit surprisingly the EU has a dominant share in every country group both in exports and imports. Russia is a more important trading partner of the Western CIS than for the Transcaucasian CIS and has a less important role in the Western Balkans. As 7 countries out of 12 are already members of WTO and the rest of the countries are observers, applying Sanitary and Phytosanitary Measures is a big challenge. It is more urgent for the Western Balkans due to their candidate (and possible candidate) status where the lack of SPS measures is an entry barrier to the common European market. In the long run they should develop an EU-compliant food safety system. However, remarkable steps have been taken; there are independent food safety agencies in some countries (Croatia, Bosnia and Herzegovina, and FYROM) and some of them have already been acknowledged by the EU. But the establishment of food safety agencies in itself cannot solve the food safety problems if sufficient resources are not available. From the above mentioned point of view, implementation of SPS is less urgent for the CIS countries but much harder as they still use the former soviet food safety standards (GOST). The switch from GOST to SPS is very costly and time consuming. The present WTO members have worked out the regulatory framework but the proper implementation and use are still at an insufficient level. Implementation of the WTO-compliant system requires strong political leadership and consensus among the stakeholders. From this perspective, the Russian WTO membership would accelerate the implementation process of SPS of the main reason being relatively high intra-CIS trade where the GOST standards are still in use. In general, Belarus and Ukraine are in a better position due to their resources, which allow them to full harmonization with and implementation of WTO standards. The smaller CIS countries should selectively carry out these actions in light of their limited resources. All the CIS countries should rely more on FAO experience in agriculture technologies and food safety and standards, especially those countries which are

currently not WTO members. This type of technical assistance should include the available and usable Russian version of Codex alimentarius.

4. Education is a key issue of the future prospects of agriculture. The common characteristic of both the Western Balkans and CIS countries is “large-scale” orientation in education. Not enough time has passed since transition for the education systems to meet the new challenges and the changed production, distribution and market systems. The needs of a small-scale, mostly semi-subsistence agricultural sector are totally different with practice-based knowledge in the focus and fragmented production structure making it even more crucial in most of the countries. The past experiences of collectivisation are still in the mind of farmers, which continuously hinders cooperation between the agricultural stakeholders. The meaning of cooperation almost equals to former (socialistic type) collective farms. Moreover, farming has a negative image in some countries. In this area the expansion of FAO’s research activities in the respective countries could foster this process and contribute to a better understanding of small-scale farming and demonstrate the special nature of its linkage to the markets. Regarding the new challenges in agriculture, like the overproduction of important commodities, the need for alternative farming activities, like organic farming may emerge. FAO could provide technical assistance to farmers especially on the different regulations and certification rules and practices.

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FAOSTAT database: <http://faostat.fao.org/default.aspx>
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World Bank database: <http://devdata.worldbank.org/data-query/>
United Nations database (Population Division of the Department of Economic and Social Affairs): <http://unstats.un.org/unsd/default.htm>
USDA Economic Research Service: <http://www.ers.usda.gov/>
WTO website and database: <http://www.wto.org>

Annexes

Annex 1. The agricultural profile of the selected countries

Countries	Ranking of					
	Share of arable land	Agricultural employment	GVA	Land reform index	Share of rural population	Together
Montenegro	3	1	4	6	5	19
Croatia	4	9	1	7	6	26
FYROM	6	4	5	8	3	28
Armenia	10	5	2	3	4	29
Azerbaijan	9	2	10	5	9	30
Belarus	7	12	12	1	1	31
Ukraine	2	10	11	2	2	32
BiH	1	11	6	11	10	33
Serbia	5	7	9	4	8	34
Georgia	11	8	8	10	7	36
Albania	12	6	3	9	11	43
Moldova	8	3	7	12	12	49

Source: Author's calculations

Explanation of the rankings:

- Share of arable land: the higher this value, the higher the number in the ranking (more agricultural)
- Agricultural employment: the higher this value, the higher the number in the ranking (more agricultural)
- Gross Value Added (GVA): the higher this value, the higher the number in the ranking (more agricultural)
- Land reform index: the higher this value, the lower the number in the ranking (should expend more efforts on land reform)
- Share of urban population: the higher this value, the higher the number in the ranking (higher rural population)

Main findings of the agricultural profile:

1. The three highest overall values can be found in Georgia, Albania and Moldova. Based on the analyses in the study, these countries are the “outliers” in their respective groups in most of the cases.
2. Armenia and Azerbaijan have almost the same rankings, just like Belarus and Ukraine. Regarding the priority issues, these country pairs are in a totally different situation facing with different problems. It makes their grouping useful.

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