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## ANALYSIS OF AGRICULTURAL HOLDINGS OF THE VISEGRAD FOUR IN THE POST-ACCESSION PERIOD

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Visegrad Cooperation is the regional organization of four states known as the Visegrad Group or the Visegrad Four (the Czech Republic, Poland, Hungary, and Slovakia). The purpose of cooperation is joint representation of economic, diplomatic and political interests of these Central and Eastern European countries and coordination of their possible measures. In the framework of this study, the major trends regarding the average area and farm number of agricultural holdings in the Visegrad Group are examined and evaluated. We attempted to elucidate structural differences between the farm structures of these countries, their different and unusual development and its reasons. Despite these differences, we have uncovered a number of identical trends and joint points as well. The average farm size in Slovakia and the Czech Republic was 28 or 135 hectares in 2007, while in 2010, this figure changed to 75 or 152 hectares in the circle of the observed agricultural holdings. For both countries, therefore, a significant increase in farm size was observed in the period under survey. While in Hungary the average size of 6 hectares in 2007 increased to 8 hectares in three years, then in Poland, the average farm was 12 or 10 hectares in size in the years under survey. In the circle of these countries, therefore, only a slight shift, mainly stagnation was observed, albeit on different bases: while the number of holdings under survey increased in Poland, it decreased in Hungary (similarly to Slovakia and the Czech Republic). Investigating the details regarding farm structure in these countries, it can be stated that most holdings carried out their activities on an area of under 20 hectares, in respect of distribution of agricultural land in the countries of the Visegrad Four. However, the survey results also revealed that in the vast majority of cases, the number of farms decreased, but there was an increase in their average size, that is, the process of concentration that has been experienced in the Western part of the European Union for the last two decades can be observed in these four countries as well.

**Keywords:** average farm size, livestock, the Visegrad Four, agricultural holdings

The four states known as the Visegrad Group, the Visegrad Four or also V4 show several common features partly due to their common history and their location, and partly because of their many similar social characteristics. Today, they are associated by their joint accession to the European Union (Nyikos, 2003).

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The countries of the cooperation maintain good relationship with the neighbouring states, which, according to Balázs (1996), has a positive effect on the process of the European integration.

Association of the V4 states loosened up as a result of political debates in the 90s, but their accession to the European Union commenced a new phase in the life of the four countries. In the view of Kégler (2003), Visegrad Cooperation represents an important political integration within the European Union, whose members are simultaneously partners and competitors in all segments of the economy.

The main aim of the group is to provide optimal cooperation in all countries, especially with its neighbours, because its main interest is to achieve democratic development in certain parts of Europe (<http://www.visegradgroup.eu>).

The V4 countries jointly endeavoured to become members of the European Union, trusting in each other's and other countries' mutual support. By reaching this goal they have become member states of the European Union at the same time in 2004.

The agricultural economies of the four countries share a number of similar features. In the Visegrad Four – especially compared to the western states – the proportion of workers employed in agriculture is high. All four countries intend to improve their competitive strengths on EU markets and have worked out a rural development programmes for the period between 2007 and 2013, which focuses on the development of rural farming and the protection of the environment. The member states of the Visegrad Group agree that the European Union's Common Agricultural Policy should ensure the livelihood of agricultural workers and encourage them to increase their productivity, and that all Member States should be treated equally (<http://www.due.hu>).

The situation of agriculture, and especially the agricultural land market, has traditionally also been a focal point of the EU public policy. The main consideration behind the EU grants and land policy is to develop viable holdings while also keeping in mind economic and food security issues. However, in the past ten years, agricultural land prices have been constantly rising almost without exception in the EU member states (<http://www.portfolio.hu>). Rising land prices can be identified as the cause of the continuous increase in the size and percentage of leased land. Only well-capitalised holdings of a viable size may survive the

compelling force of the size increase. The existence of this force is demonstrated in our study as well, with respect to all land used for agricultural purposes.

### Material and methods

As theoretical foundation for the study, data of secondary character from the public database of EUROSTAT were used. First of all, we tried to eliminate the factors resulting from the anomaly of the used statistical register. The data are systematised by various aspects, but the highest attention was paid to the changes in farms number and their average territories.

We considered it important to narrow the survey to the V4 countries. In our study, the findings made on the basis of the surveyed data and our conclusions made through the analysis of these data are presented. The conducted survey embraced the period from 2007 to 2010, our analyses were carried out with the help of the said secondary database. Basic characteristics of the test sample were evaluated after analysing simple statistical averages. When analysing the data, we found that the decrease in the number of farms in Slovakia was higher than expected in the surveyed period. In this respect, EUROSTAT mentions that in a few Member States – for instance, in Slovakia – the limit of data observation was set higher, however, the accurate extent of it was not communicated, neither what number of farms fall out of the observed circle as a results of this. The obtained data have been used and applied being aware of all of the above.

Thus, the aim of the study was to establish what similar trends can be observed, and what interconnections can be found between the agricultural holdings of these four countries.

### Results and their evaluation

The accession of the Visegrad Four to the European Union had several positive results in terms of both their economy and population. The previously unexploited markets opened up in front of their economies, and, of course, the markets of the Visegrad Group became available for the countries of Western Europe. They were able and had to be able to join a commercial sphere where they had to face more developed Member States with higher economic potentials (Nádas, 2011).

The challenge was particularly noticeable in the field of agriculture.

The agricultural structure, the structure of agricultural holdings of the V4 countries in a number of cases differed markedly, and still differs from the Western Member States

nearly a quarter century after the regime change, and that is a source of many of their problems and unique characteristics.

Being aware of this, we analysed the characteristics of agricultural production units of the Visegrad Four, and the characteristics of the average farm number and their average area in the years 2007 and 2010.

We did not wish to set up a specific survey order based on technical aspects, thus we determined subjectively how countries will follow each other in our analysis.

The survey was begun with Poland, having the largest agricultural land and farm number.

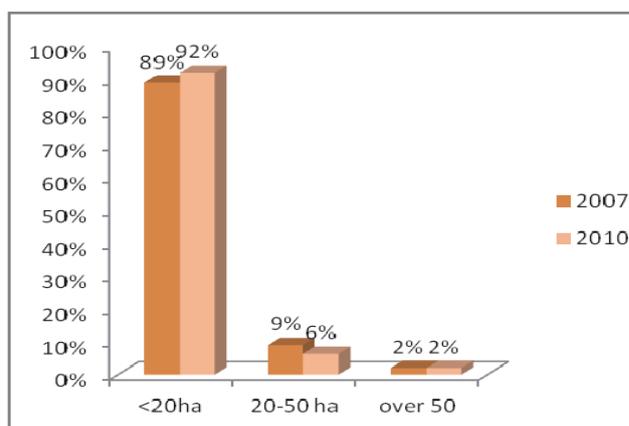
1. Poland,
2. the Czech Republic,
3. Slovakia,
4. Hungary.

#### Ad 1. Poland

– Poland is one of the Europe's largest agricultural producers. The country's agricultural sector was in a unique position in the socialist system, as here - unlike the other former socialist countries - the traditional farming structure remained. In Poland, cooperatives could not be spread even by the socialist system, private ownership of land and use remained intact. Most of the arable lands are cultivated by poorly equipped small holdings of a few hectares.

These demand a lot of manpower nowadays as well and they are really in a need of technical development (Törőné, 2012).

When conducting Farm Structure Survey of 2010, 1.5 million holdings were registered in the system of EUROSTAT, which shows a large (one-third) increase in comparison to the year 2007.



**Figure 1** Distribution of Polish holdings regarding the utilised agricultural area in %

Source: Farm Structure in Poland; Agriculture, forestry and fishery statistics, 2013 edition, own edition based on Eurostat pocket books

**Table 1** Farm structure characteristics of agricultural holdings in Poland

Poland	2007	2010	Change 2010/2007
<b>Number of holdings</b>	1,130,000	1,506,600	133%
<b>Total UAA in ha</b>	13,900,000	14,447,300	104%
<b>Livestock (LSU)</b>	10,700,000	10,377,200	97%
<b>Average area per holding in ha</b>	12	10	83%

Source: Farm Structure in Poland-2007; Agriculture, forestry and fishery statistics, 2013 edition, Eurostat pocket books

Livestock units decreased by 3% during these three years, despite the fact that the UAA (utilised agricultural area) increased.

Vast majority of farms operated on an area of under 20 hectares in the years under survey. The proportion of farms of between twenty and fifty hectares in size slightly decreased, while proportion of farms over 50 hectares in size did not change in the period under survey; from every 100 holdings, only two belong to this size class.

### Ad 2. Czech Republic

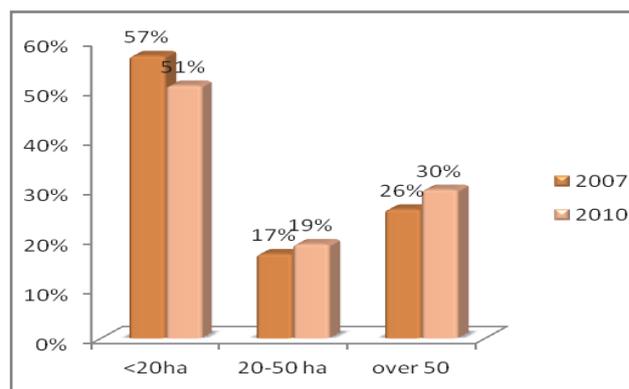
– the Czech Republic that set out from a favourable position when the regime was changed is primarily an industrial country, which was supported by its advantageous geographical position in its economic development. Its location close to the developed Western European territories, including its main market Germany, represented a great advantage for the country in its realignment. The role of agriculture shrinks into insignificance beside industry both in employment and its share from GDP (<http://tudasbazis.sulinet.hu>). With this background, we examine the characteristics of the Czech agricultural holdings (Table 2).

When conducting Farm Structure Survey of year 2010, 22,860 holdings were registered in the system of EUROSTAT. In 2010, in parallel with the decrease in the number of farms, the amount of utilised agricultural areas slightly decreased. (By 1% compared to the data of 2007.)

However, in terms of average farm area, the Czech Republic has the highest index: it is outstanding both among the Visegrad countries and the European Union Member States – even among the EU-15. (The average size in EU-27 countries was 14.6 hectares in 2010; this number is between that of Poland and Hungary and that of the Czech Republic and Slovakia.) The average area of 152 ha achieved in 2010 is nearly two times higher than the average size of the United Kingdom considered as the highest by the European Union Member States, which was 84 hectares. Based on the above, the average area of the Czech Republic increased by 12% compared to 2007.

During the period between 2007 and 2010, the price of livestock – expressed in livestock units (LSU) – decreased the most significantly. While the LSU was recorded to be above 2 million in 2007, this amount decreased by 0.3 million (16%) in 2010. In the Czech Republic, each examined index (number of farms, the total amount of utilised agricultural land and livestock) accounts for more than a half of the country's agricultural production.

More than a half of the farms were operating on areas smaller than twenty hectares in size both in 2007 and 2010; by 2010 their number had decreased by 6%. However, the



**Figure 2** Distribution of Czech agricultural holdings regarding the utilised agricultural area in %  
Source: Farm Structure in Czech Republic – 2007, Statistics in focus 86/2008; Agriculture, forestry and fishery statistics, 2013 edition, own edition on the basis of Eurostat pocket books

proportion of farms operating on an area between twenty and fifty hectares in size increased slightly during the years under survey and there was a positive change in the proportion of farms with a size of over 50 hectares as well. Overall, while the number of farms less than 20 hectares in size and their proportion also decreased compared to 2007, the proportion of farms that can be considered viable and their size is either between twenty and fifty or over 50 hectares, increased by 2 and 4%.

### Ad 3. Slovakia

– Slovakia has achieved remarkable progress among the Visegrad Four in stabilising the country's economy and in the field of structural reforms. The country's performance exceeded the expectations and the country was the first one to join the euro zone in 2009.

Domestic consumption boom was a result of the increase in real income, and growth of export, which facilitated the process of domestic production becoming more effective. The country's agricultural sector was characterized by large-scale farms both before and after the regime change; the major part of the land area was utilised by large farms.

When conducting Farm Structure Survey of the year 2007, nearly 70 thousand agricultural holdings were registered in Slovakia, while in 2010 this figure fell by almost a third.

These holdings were operating on nearly 1.9 million hectares of agricultural land, which represented 98% of the Slovak agricultural land. By 2010, this number had decreased by 1%, which is a negligible change compared to the development of farm number. By 2010, the average farm

**Table 2** Farm structure characteristics of agricultural holdings in the Czech Republic

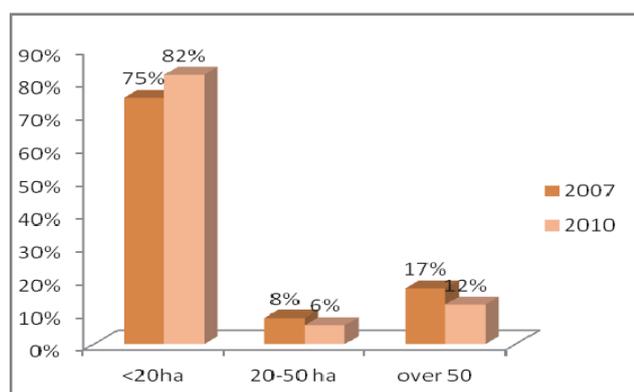
the Czech Republic	2007	2010	Change 2010/2007
Number of holdings	25,900	22,860	88%
Total UAA in ha	3,500,000	3,483,500	99%
Livestock (LSU)	2,040,000	1,722,460	84%
Average area per holding in ha	135	152	112%

Source: Farm Structure in Czech Republic – 2007, Statistics in focus 86/2008; Agriculture, forestry and fishery statistics, 2013 edition, Eurostat pocket books

**Table 3** Farm structure characteristics of Slovak agricultural holdings

Slovakia	2007	2010	Change 2010/2007
Number of holdings	69,000	25,000	36%
Total UAA in ha	1,900,000	1,895,500	99%
Livestock (LSU)	707,000	668,300	94%
Average area per holding in ha	28	75	267%

Source: Farm Structure in Slovakia; Agriculture, forestry and fishery statistics, 2013 edition, Eurostat pocket books



**Figure 3** Distribution of Slovak agricultural holdings as regards the utilised agricultural area in %  
Source: Farm Structure in Slovakia; Agriculture, forestry and fishery statistics, 2013 edition, own edition based on Eurostat pocket books

size had increased by 47 hectares compared to the previous average – a very significant number. From 2007 to 2010, the livestock unit of farms decreased by 6%. The decrease of its livestock size expressed in LSU was followed by a decrease in the size of utilised agricultural area.

Vast majority of farms operates on less than 20 hectares of land. The proportion of farms with area between twenty and fifty hectares slightly decreased (by 2%), the proportion of farms of over 50 hectares also changed in the negative direction (5%) in the period under survey.

In case of Slovakia, the fact can be stated that while the proportion of farms decreased regarding the areas below 20 hectares in 2010, the proportion of holdings on areas between twenty and fifty or over 50 hectares in size decreased in 2010; beside the large-scale fall in the absolute number of the (observed) farms.

#### Ad 4. Hungary

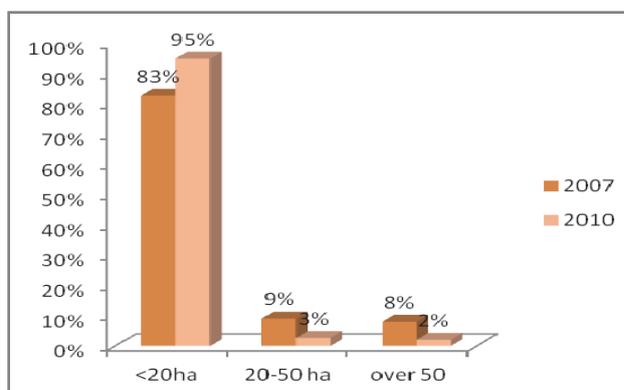
– geographical features of Hungary's agriculture show an overall positive picture. Private farms, state farms, different companies and cooperatives operate on its agricultural land. The collapse of the markets of former socialist countries and

a decrease in purchasing power in Hungary have severely affected its agriculture and food industry.

The key role of agriculture is to meet the domestic population's need in food as fully as possible. Under the appropriate conditions, with an advanced production standard it can help the country's economy to achieve an active foreign trade balance (<http://www.hippo.uw.hu>)

In 2007, when conducting the Farm Structure Survey, more than 600 thousand farms were registered, while in 2010 this figure was already well under 600 thousand, which represents a decrease by 8%. These holdings cultivated a total of about 4 million hectares of land in 2007. The average area was nearly six hectares in 2007, which – in the context of the growth of utilised agricultural area – showed an increase by 33% in 2010. In 2007, the size of livestock was 2.1 million large livestock unit; by 2010, this number increased by 18%.

Examining Figure 4 it can be stated that in 2007, 83% of the Hungarian holdings, while in 2010, a proportion of them higher by 12% were operating on an area smaller than 20 ha. However, proportion of farms between twenty and fifty hectares was reduced during the years under survey



**Figure 4** Distribution of Hungarian agricultural holdings as regards the utilised agricultural area in %  
Source: Farm Structure in Hungary, Agriculture, forestry and fishery statistics, 2013 edition, own edition based on Eurostat pocket books

**Table 4** Farm structure characteristics of Hungarian agricultural holdings

Hungary	2007	2010	Change 2010/2007
Number of holdings	626,300	576,800	92%
Total UAA in ha	4,050,000	4,686,300	115%
Livestock (LSU)	2,100,000	2,483,800	118%
Average area per holding in ha	6	8	133%

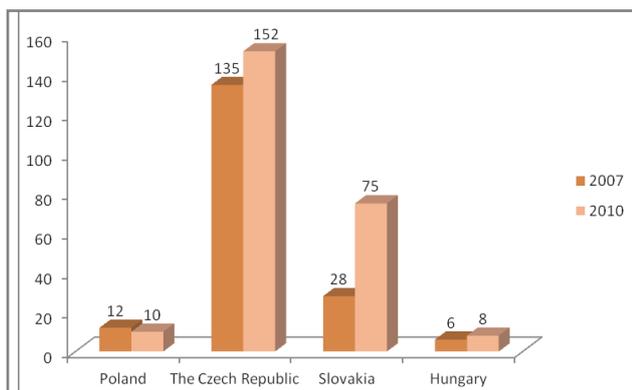
Source: Farm Structure in Hungary, Agriculture, forestry and fishery statistics, 2013 edition, Eurostat pocket books

(by 6 percentage points), the proportion of farms of over 50 hectares in size changed to the same extent. The trend here is similar to most of the countries previously studied: while in 2010, the number of farms operating on an area smaller than 20 hectares increased, and the number of those having an area between 20 and 50 hectares, or over 50 hectares in size stagnated or declined.

### Conclusions

As part of the international comparison, we studied and evaluated the major trends in the average area and number of agricultural holdings in the Visegrad Group. We attempted to elucidate structural dissimilarities between the farm structures of these countries, their unique and unconventional development, and the reasons behind it. Despite the differences, we have uncovered a number of identical trends and points of similarity as well.

During the survey we established that several similar and several different phenomena can be found in the agricultural structure of the four countries. The greatest similarity could be observed in the case of the Czech Republic and Slovakia as a result of their common historical past. Poland had the largest number of agricultural production units, where 1.5 million farming operations were recorded in 2010. The lowest quantity of such units operated in the Czech Republic, which represents only a fraction of their number in Poland.



**Figure 5** Average farm size of the Visegrad Four countries in ha  
Source: Farm Structure in Hungary, Agriculture, forestry and fishery statistics, 2013 edition, own edition based on Eurostat pocket books

Among the Visegrad Four countries, the Czech Republic has the highest average area, more than the Member States of the European Union with the largest average farm size, and perhaps Slovakia is similar to the average of the EU-27. In contrast, Hungary and Poland - mainly due to the large number of small-scale private farms - are similar to the Mediterranean European Union Member States, at least in terms of average farm sizes.

If we consider European size unit (ESU) values, the lag between the discussed countries and the Western part of the European Union is much more significant; while economic size category, in our opinion, cannot properly reflect the unique features of the Central and Eastern European Member States. Studies of this kind are hindered by the deficiencies of the EUROSTAT database as well: for example, with respect to 2010, it did not contain any clear

sources that would have confirmed the ESU-independence of the analysed data.

Having studied the farm structure data of the countries, we confirm that in case of the Visegrad Four, in respect of the distribution of agricultural land, most holdings carry out their activities on areas of less than 20 hectares. As a result of the survey, we also established that in the vast majority of cases, although the number of farms decreases, their average size increases, that is, the concentration process, which has been experienced in the Western part of the European Union for the last two decades can be observed in these four countries as well.

Finally, we consider it important to draw attention to the fact that in case of Hungary, Slovakia and the Czech Republic, the ownership and holding of land continues to show a significant discrepancy, which causes several problems, and impedes the successful agricultural catch-up (to the west) as well.

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