

## MAJOR TENDENCIES IN LIVESTOCK CHANGES AFTER THE EU ACCESSION

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### ABSTRACT

In the mid 80s Hungarian agriculture belonged to the forefront of the world in many respects, despite the fact that there was a lot to do regarding yields, production costs, production structure, and the fastness of adaptability to markets and establishing accordance between the elements of the food industry chain. The mid 1980s witnessed an energetic improvement despite the unequal pace, and then followed an era of different tensions and imbalances in Hungarian agriculture. At the time of the regime change the agricultural sector, and particularly animal production within that, suffered from the signs of crisis and it was getting into an increasingly difficult position. The vast majority of the agricultural large scale farms ceased to exist, and most of the arable land was privatised. Production fell back, its composition became more heterogeneous, sometimes with an irrational production structure and selling difficulties arouse. Profitability decreased in the field of animal production generally, and some activities even had losses. The domestic consumption fall-back, which was caused by the farmers' lack of capital, the unorganised production, and the decrease in living standards, produced an amount of unsellable goods and it made the otherwise low profitability even worse. The low level of profitability resealed in unjustified production decline and led to the fact that the number of domestic animals in Hungary decreased to a never experienced depth. Today there are positive changes in the field of animal production, which might result in the long-term growth of our livestock. This study was designed to present the major tendencies and spatial characteristics of Hungarian livestock.

**Keywords:** livestock (cattle, pig, sheep, hen species), temporal and spatial changes, purchase price

### INTRODUCTION

The regime change and the transition to a market economy induced significant changes in Hungarian agriculture and within that in all sectors of animal production. (KOMAREK, 2003, 2008a)

In 2004 the EU accession meant another challenge for the agriculture, which had considerable changes and was somewhat recovering. The balance between the two sectors of agriculture gradually changed. The decrease of animal production, which exceeded that of plant production, resulted in the dominance of the plant sector in 2007.

Today the relative ratio of the two sectors did not change significantly since plant production is still dominant with a two third proportion (GOCKLER, 2014; KOMAREK, 2004, 2008b, 2011).

The transformation of agriculture did not influence the regions evenly. Although agricultural production fell back everywhere and so did their contribution to the GDP, the agricultural regions kept their leading position, among others, in the field of animal production (KOMAREK, 2007, 2008c; NOVÁK AND PÁLFALVI, 2008).

## MATERIAL AND METHOD

The statistical data provided by the Hungarian Statistical Office (KSH) were used for the analysis. Indices were formed from the data in order to present the temporal and spatial comparative analysis of the animal production sectors and also the main tendencies of the changes. The data of the following livestock were used with regard to the period between 2004 and 2013: cattle, pig, sheep, and hen species.

In the past few years and even today the transformation of Hungarian agriculture resulted in considerable changes in the sector and spatial structure of animal production. Due to these changes it is necessary to perform examinations that could find the answers if there were positive or negative proportion changes in the sector structure of animal production as well as the role and importance of which animal production sectors increased or decreased in the past few years. To answer these assumptions I used mathematical-statistical methods for my analysis.

## RESULTS

Hen (poultry) and pig production are dominant in Hungarian animal production. Nonetheless there was a significant change in case of these two animal species during the investigation period (*Table 1*). The number of pigs was 4.059 million in 2004, which fell back to 3.013 million by 2013. It means approximately a 26 percent decrease. Hen production showed a variable trend between 2004 and 2012, while it has been decreasing since 2012 until these days. The decrease in case of the hens was somewhat smaller in the investigation period (10 percent).

Cattle production has a more favourable position, as the number of animals is constantly increasing. In 2004 there were 723 thousand cattle in the country, which increased to 783 thousand by 2013. It means an 8 percent increase compared to the data of the base year (*Table 1*).

**Table 1. Temporal changes in Hungarian livestock (2004-2013)**

Year	Cattle		Pig		Sheep		Hen species	
	Thousand animals	Basis relative number	Thousand animals	Basis relative number	Thousand animals	Basis relative number	Thousand animals	Basis relative number
2004	723	1.00	4059	1.00	1397	1.00	32814	1.00
2005	708	0.98	3853	0.95	1405	1.01	31902	0.97
2006	702	0.97	3987	0.98	1298	0.93	30303	0.92
2007	705	0.98	3871	0.95	1232	0.88	29866	0.91
2008	701	0.97	3383	0.83	1236	0.89	31165	0.95
2009	700	0.97	3247	0.80	1223	0.88	32128	0.98
2010	682	0.94	3169	0.78	1181	0.85	31848	0.97
2011	697	0.96	3044	0.75	1120	0.80	32860	1.00
2012	760	1.05	2989	0.74	1185	0.85	30075	0.92
2013	783	1.08	3013	0.74	1271	0.91	29474	0.90

Source: Author's calculations, based on KSH data

Sheep production in Hungary is of less importance, but the tendency of change in the number of animals is variable here as well. During the investigation period there was an increase from 2004 to 2005 followed by a decrease until 2005-2007, and then another slight increase came and again a decrease followed from 2008 to 2011 (*Table 1*).

From 2011 until today the signs of increase can be seen in the field of sheep production. Nonetheless there was a 9 percent decrease from the base year to the reference year.

The sometimes unfavourable tendencies in our livestock changes may be explained in many cases with high feedstuff prices, low selling prices, the ever harder selling possibilities, and the cheap, poor quality import products that keep pouring in. Therefore today in Hungary animal production is in many cases means an unprofitable activity sometimes planned to be terminated.

The cattle stock in Hungary was 783 thousand in 2013. 46.3% of the animals can be found in the Northern Great Plain and in the Southern Great Plain region. On regional level the upper extreme value was represented by the Northern Great Plain region with 188 thousand animals, that is 24%, while the lower extreme value by the Central Hungary region with 69 thousand animals, that is 8.8%.

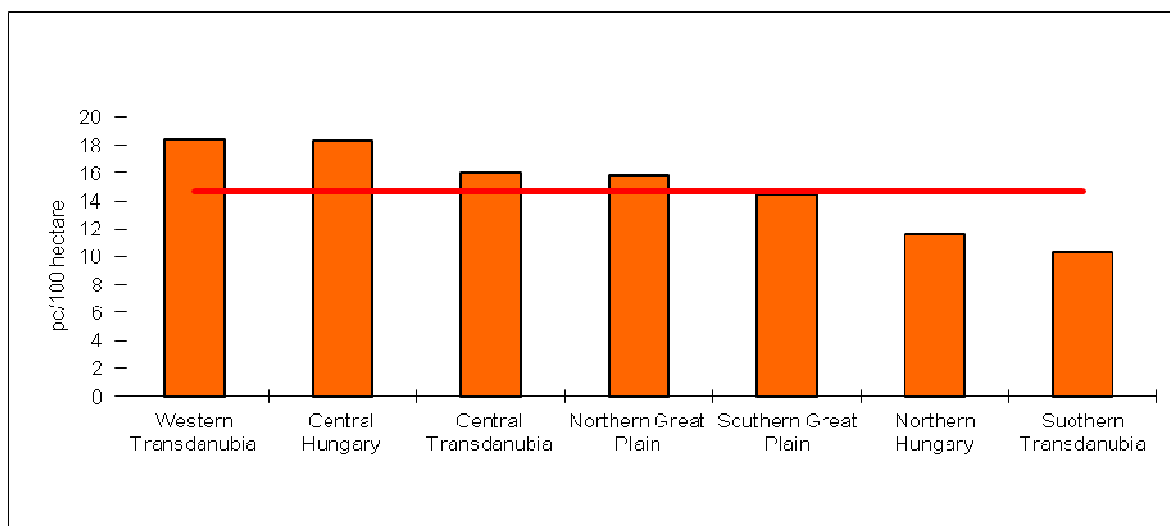
The pig stock in Hungary was 3.013 million animals in 2013, the highest values found on the Plain regions. 55.6% of the pig stock of Hungary is given by the Plain territories. When considering the upper and lower extreme values we found that the situation is similar to that of the cattle stock. In case of pigs, the Northern Great Plain region had the upper extreme value (880 thousand animals – 29.2%), while the Central Hungary region had the lower extreme value (108 thousand animals – 3.6%).

The role of the Plain regions is quite significant in case of the sheep stock as well. In 2013 there were 1.271 million sheep in Hungary, 69.1% of which is shared between the Northern Great Plain and the Southern Great Plain regions. It means a considerable spatial concentration. In case of sheep the upper extreme value was represented by the Northern Great Plain region with 514 thousand animals, that is 40.4%, while the lower extreme value by the Western Transdanubian region with 25 thousand animals, that is 2.0%.

In case of hen species, it is the Central Transdanubian region that has a considerable stock besides the Plain regions (Northern and Southern Great Plain). In 2013 there were 29.474 million hens in Hungary. This number does not give a real picture as it does not include the number of geese, ducks, turkeys etc. However, in the Southern Great Plain region for instance, the above mentioned poultry species also have importance. Considering the hen species, the Northern Great Plain region had the upper extreme value (8.275 million animals – 28.1%), while the Southern Transdanubian region had the lower extreme value (2.426 million animals – 8.2%).

Regarding the livestock of Hungary, we can say that despite the difficulties, the Plain regions (Northern and Southern Great Plain region) have an essential role in animal production these days, since their share from the national livestock exceeds 50%, cattle and hen species not considered here.

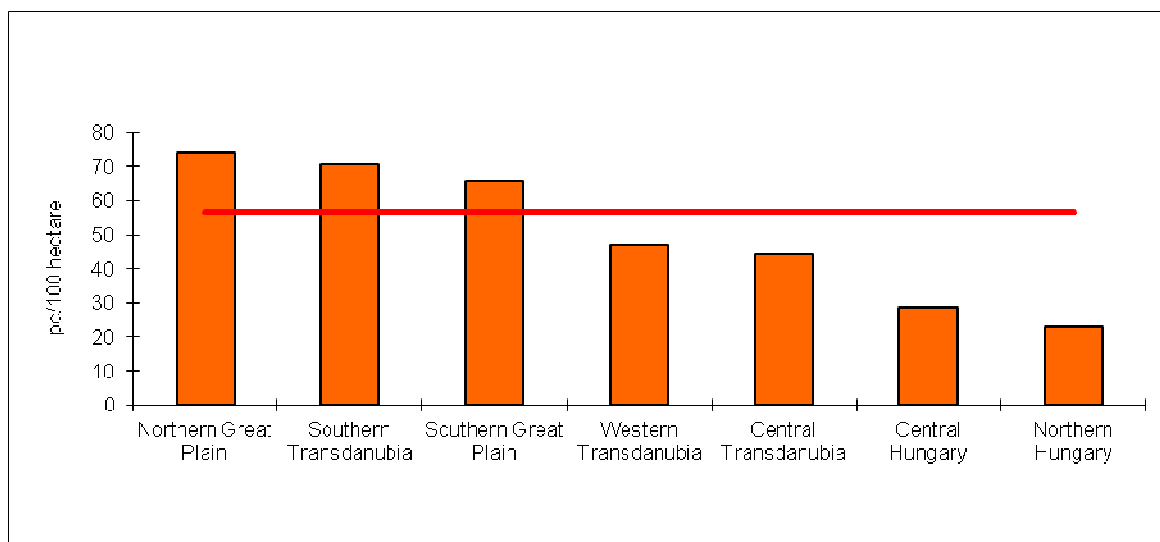
In case of cattle stock per a hundred hectares of agricultural land, there are four regions exceeding the national average (Western Transdanubia, Central Hungary, Central Transdanubia and the Northern Great Plain). In 2013 the national average was 14.7 animals. The Western Transdanubian region is outstanding with 18.4 animals and the last one is the Southern Transdanubian region with 10.3 animals (*Figure 1*).



**Figure 1. Cattle stock on 100 ha of agricultural land (2013)**

Source: own calculation

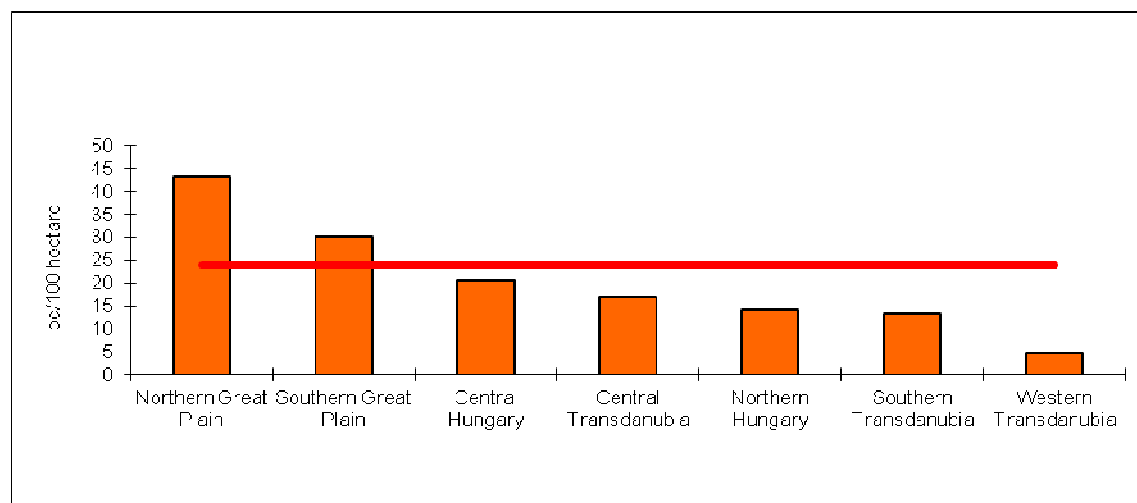
Considering the pig stock on 100 hectares of agricultural land, the national average was 56.4 animals. The national average was exceeded by three regions: the Northern Great Plain (74.0 animals), Southern Transdanubia (70.5 animals) and the Southern Great Plain (65.9 animals). Consequently in this case the upper extreme value is represented by the Northern Great Plain, while the lower extreme value by Northern Hungary (*Figure 2*).



**Figure 2. Pig stock on 100 ha of agricultural land (2013)**

Source: own calculation

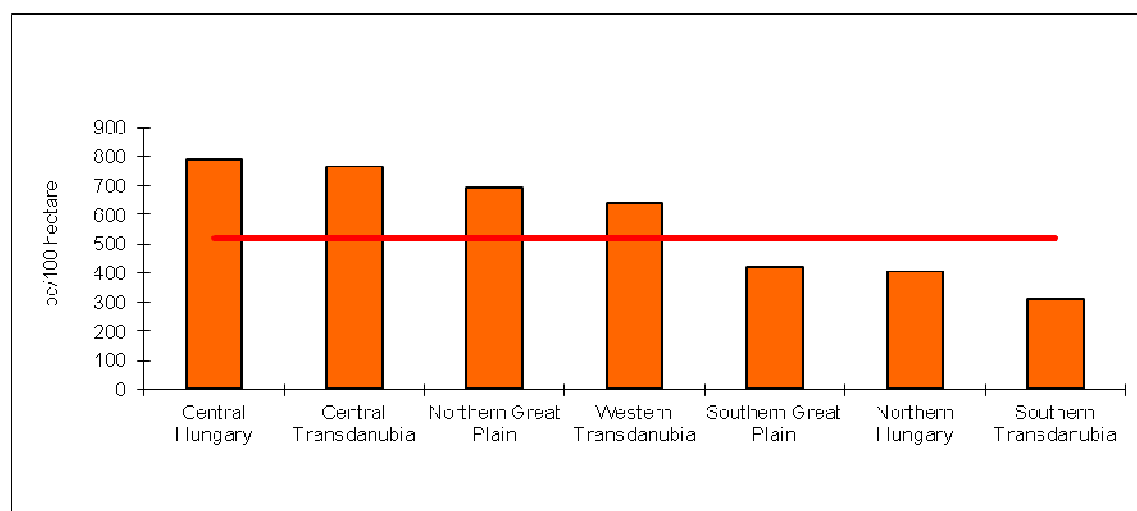
In case of the sheep stock on 100 hectares of agricultural land is more subtle. There are only two regions exceeding the national average, they are the Northern Great Plain and the Southern Great Plain. The national average in the time of the investigation was 23.8 animals. The upper extreme value is represented by the Northern Great Plain with 43.3 animals), while the lower extreme value by Western Transdanubia with 4.4 animals. *Figure 3* reflects well that the sheep industry is rather concentrated.



**Figure 3. Sheep stock on 100 ha of agricultural land (2013)**

Source: own calculation

A similarly subtle picture is given when regarding the stock of hen species on 100 hectares of agricultural land. There are only four regions (Central Hungary, Central Transdanubia, the Northern Great Plain and Western Transdanubia) reaching and exceeding the national average, which was 521.7 animals in 2013. The upper extreme value was held by Central Hungary with 790.9 animals, while the lower extreme value by the Southern Transdanubia region with 308.7 animals (*Figure 4*).



**Figure 4. Hen stock on 100 ha of agricultural land (2013)**

Source: own calculation

The average selling price of some important animal species varied in the investigation period; however it had an increasing tendency. From the base year of 2004 to 2013 the average price of the slaughter cattle increased by 91.6%, the slaughter chicken by 59.6%; the slaughter pig by 52.7%; the slaughter poultry by 50.2%; the slaughter hen by 38.5%; and the price of the slaughter sheep by 31.3% (*Table 2*).

**Table 2. The average prices of some important animals (HUF/kg)**

Year	Slaughter cattle	Slaughter sheep	Slaughter pig	Slaughter poultry	Slaughter chicken	Slaughter hen
2004	225	576	262	225	183	91
2005	267	626	275	210	170	89
2006	297	637	292	215	170	109
2007	287	591	260	247	198	96
2008	303	594	306	286	232	90
2009	327	653	315	263	215	111
2010	356	666	296	262	214	99
2011	507	771	330	301	250	110
2012	520	784	388	322	271	123
2013	431	756	400	338	292	126

Source: KSH data

The average price of the most important live animals on animal markets and fairs shows a different picture. Compared to the base year (2004) there is an increase in case of all animal species in the investigation. In the investigation period the average price of live animals increased compared to the base year as follows: in case of the live chicken by 74.8%; the young pig by 59.0%, the piglet by 57.8%, the live hen by 52.7% and the slaughter pig by 51.4%

**Table 3. The average prices of some live animals on markets and fairs (HUF/kg)**

Year	Piglet HUF/pc	Young pig	Slaughter pig	Live chicken	Live hen
2004	7 755	390	311	429	425
2005	10 262	481	348	483	461
2006	9 667	479	351	503	460
2007	7 921	404	338	582	521
2008	8 773	443	355	622	558
2009	13 537	629	422	675	607
2010	11 060	520	396	652	642
2011	9 383	469	382	691	640
2012	12 649	604	497	781	734
2013	12 237	620	471	750	649

Source: KSH data

As the data of *Table 3* indicate, sometimes there is significant difference between the average selling price and the average prices on animal markets and fairs.

Those producers who have small animal stock can sell their products on animal markets and fairs. Producers having larger number of animals must sell their products at the average purchase prices and therefore reckon with considerable losses, since it is sometimes considerably lower than the average prices on animal markets and fairs. No wonder that the number of animals in Hungary has fallen back recently, as the price do not cover the maintenance and feedstuff cost, which means that the average profitability of animal production is decreasing.

## CONCLUSIONS

Overall it can be concluded that the position of animal production today is not quite favourable. As a result of the regime change the whole agriculture suffered considerable loss, within that animal production is significantly higher than plant production. After the EU accession the fallback in case of livestock kept going on, except the last two years, the yields however, improved only very little. There are many reasons for that, but perhaps the most important is the lack of the up-to-date machines and equipment as well as that of the buildings to support their function and also that the farms with smaller numbers of animals did not have a possibility to purchase and operate such equipment. Another problem was the lack of own forage-production areas and the unfavourable, sometimes the unpredictable price fluctuation, in addition the professional deficiencies, the lack of large-scale investments, occasionally the fluctuations of the livestock purchase prices and the high costs of meeting the animal welfare and environmental requirements set by the EU. It would be an important task in the future to stop the decline of the livestock and also to increase the number of animals and improve the yields especially in the regions where animal production has a long history and traditions. It is all the more important since the western European countries having more developed agriculture are ahead of us in this respect as well.

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