

RESEARCH ON THE AGRICULTURAL SITUATION IN DANUBE – KRIȘ – MUREȘ - TISZA EUROREGION

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Abstract

DKMT Euroregion, born from the desire to boost the joint economy and mobilize Community fundings for joint programs of European development, is characterized by an extraordinary agricultural potential with fertile lands. To demonstrate this potential, we took into consideration the analyze of the population employed in agriculture, contribution of agriculture to GDP, agricultural areas exploitation, main cereals and fruits crop production, wine growing situation and last but not least, meaningful comparisons of livestock in all three regions. It is required an evaluation of the existing agricultural programs and projects for a development policy (or even of a program). One of the main objectives would be to assess the relevance of these projects and their impact, observed and expected, concerning the DKMT agriculture. It is necessary to implement an appropriate agricultural policies for the Euroregional space in order to support farmers, but taking into account the European and national policies. A strong regional collaboration represents a big advantage, especially for the component regions, unevenly developed.

Keywords: agricultural potential, programs, production, livestock, counties

Introduction

"Danube-Criș-Mureș-Tisza" (DKMT) Euroregion has been completed in November 1997 at the regional cooperation framework of Stability Pact. The region comprises Romanian counties Arad (Arad), Caraș-Severin (Reșița) and Timiș (Timișoara), Hungarian counties Bacs-Kiskun (Kecskemet) and Csongrad (Szeged) and, finally, Serbian Autonomous Province of Vojvodina (Novi-Sad), as represented in figure 1:



Figure 1. DKMT Euroregion

The DKMT Euroregion represents an area of remarkable socio-cultural dynamism, intersection of a larger economic interest network, with local training effect, acceleration of European integration territories where they fit (Popa, 2006).

According to the interview realized by Jean Louis Calderon high school in Timisoara with Mr. Zlat KASA, he has confessed that: "The idea of Euroregion was born from the desire of participants to collaborate, the necessity to boost the joint economy and create the support that allows the development of a suitable infrastructure for an economic cooperation".

The statistical data from 2008 point out the following facts: the Euroregion has an area of 59185 km², a population of 4411997 inhabitants and a density of 77.5 inhabitants/km². If we analyze each of its side, more than 2 million people (representing 45.5% of all population) live in Vojvodina (Serbian Banat) with an area of 21506 km² (36.3%), which show a density of 93.3 inhabitants/km². In the three Romanian counties, there are over 1.4 million inhabitants (32.6% of all Euroregion) over an area of 24971 km² which show a density of 57.6 inhabitants/km². In the two Hungarian counties, more than 950000 inhabitants coexist (21.6% of all Euroregion) over an area of 12708 km², which shows a density of 81.7 inhabitants/km².

The specification of these numbers is necessary, because the understanding of a spatial phenomenon is equally due to the previous knowledge of its physical dimensions (Popa, 2006).

Materials and methods

The authors of this paper have completed two phases. In the first phase – preparatory – it has been required a theoretical and bibliographical documentation concerning the DKMT Euroregion and statistic data. It has been defined the issue and formulation of the main hypotheses in order to constitute an explanatory and convincing model, inducing the importance and activity of the researched subject.

The second phase has been drawn up and completed by the collected information. The drafting of this paper was made in laboratory, based on statistics, the existing material and consulted bibliography.

Results

The region is characterized, in its great majority, by much extended surfaces, with extremely large areas of meadow - exposed to floods - which stretch along some typical plain rivers and higher areas, often covered with loess. Common to the three regions is the great agricultural potential. The climate is characterized by rains during the vegetation period and dryness during the drought. At the western side of Tisza River, during the summer, the drought risk could appear. Black earth soils/ Chernozem of Bacica and from the western Banat area are among the most fertile agricultural soils in the world. (Rieser, page 2). Natural richness of this Euroregion is based on the fertile agricultural land, mentioning that they belong almost entirely to the private sector and less to the state sector.

Regarding the population employed in agriculture, the following data show us: 2005, in the Romanian counties, for: Arad- the agricultural population represented 25.9%, Caras-Severin, 37% and Timiș, 24.9%; for 2009, in Vojvodina, the population employed in agriculture represented 21%; for 2000, in Hungarian counties: Bacs-Kiskun, the agricultural population represented 8.7%, and for Csongrad, 7.5%.

Although these regions have considerable agricultural potential, the percentage of the employees in agriculture is quite low, especially for Hungarian counties. A characteristic of the agricultural production for Romanian and Hungarian regions is that their contribution to the gross added value is higher than the national average. In 2005, in Del-Alfold region, the contribution of agriculture to GDP was 11.4% and in 2007 has decreased to 11%; in Western region, Romania, in 2005, the contribution of agriculture to GDP was 10% and in 2007 it has decreased to 7.6% (Központi Statistztikai Hivatal, INS, 2010, pag. 77).

In order to emphasize this significant agricultural potential, we analyzed the agricultural area for each county separately, obtaining the following results, as represented in

Figure 2: from the total area of the Autonomous Province of Vojvodina, 82% is occupied by agricultural land; in the Romanian region, the agricultural area of Timiș County is 80% of the total county; and in the Hungarian region, the highest agricultural percentage is held by Csongrad county, with 75% of the total area. Caras-Severin, has the smallest agricultural area from all over the Euroregion, having the mainly mountain relief.

The three regions, that form the Euroregion, have a total agricultural area of 4.237.297 ha, which represent 71.6% of the total area of DKMT Euroregion. The percentages of agricultural area in Euroregion can be seen in Figure 3, presented as: 41.49% Vojvodina, 37.9% for Romanian side and 20.61% for Hungarian side.

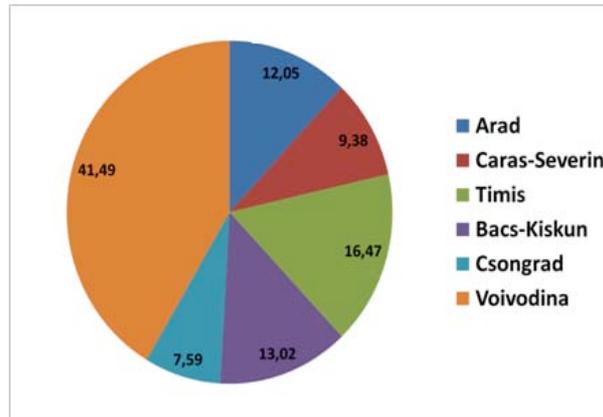
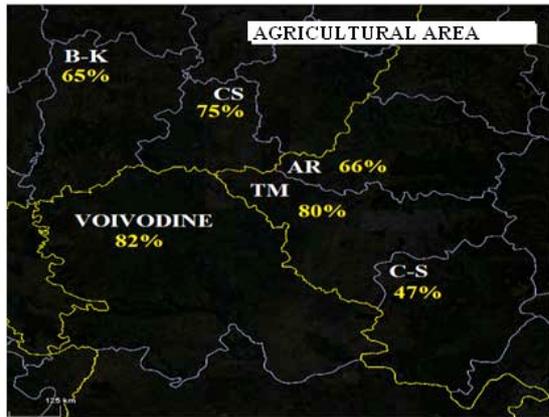


Figure 2. Agricultural area for each region

Figure 3. Agricultural area, DKMT, (%), 2008

Regarding the exploitation of agricultural crop areas, we can observe in Figures 4, 5 and 6 that the areas cultivated with corn, wheat and sunflower have almost the same values:
Wheat: Vojvodina: 40.75%, Romanian side 32.97%, Hungarian side 26.27%
Corn: Vojvodina: 63.32%, Romanian side 23.36%, Hungarian side 13.31%
Sunflower: Vojvodina: 58.81, Romanian side 18.11%, Hungarian side 23.08%.

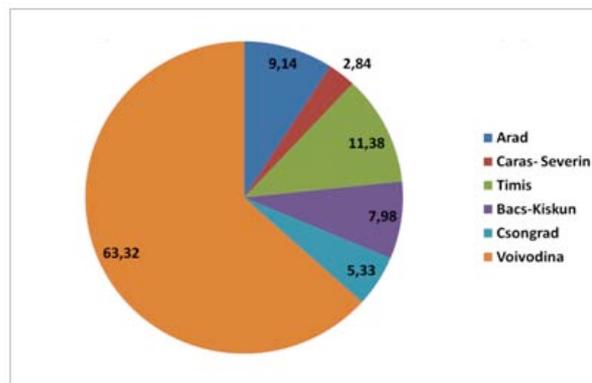
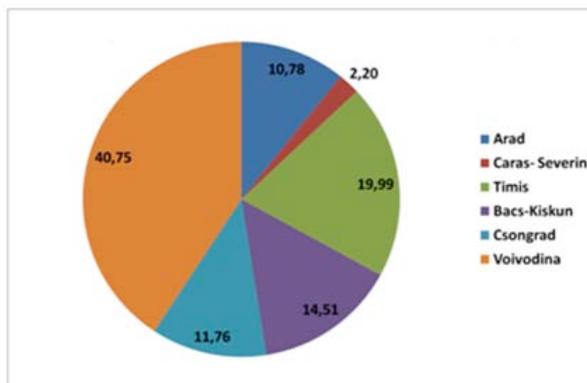


Figure 4. Area cultivated with wheat, 2008, (%)

Figure 5. Area cultivated with corn, 2008, (%)

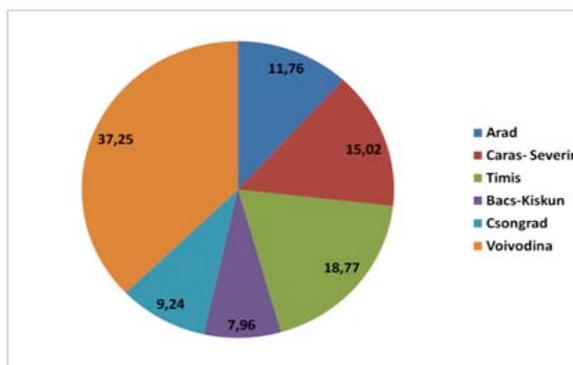
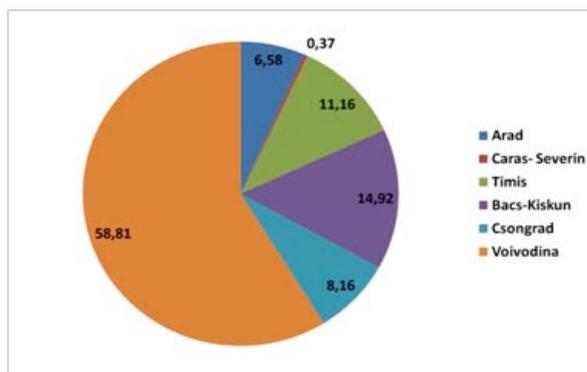


Figura 6. Area cultivated with sunflower (%), 2008 Figure 7. Area cultivated with potatoes, (%), 2008

The area cultivated with potatoes has the following values: Voivodina 37.25%, Romanian side 45.55%, Hungarian side 17.2% (Figure 7).

The viticulture has a significant weight in Timiș County, 39.51% of the total area cultivated with vineyards, Bacs-Kiskun, 32.34%, Arad, 17.22%, the others having less than 5%, as Figure 8 shows us. In the Hungarian region, there are winegrowing areas Hajos-Baja, Kunság and Csongrad, where they make the best wines. For Romanian counties, Vineyard Arad and in hilly areas of Timiș County, there are winegrowing areas Recaș, Buziaș and Giarmata who give famous and high quality wines.

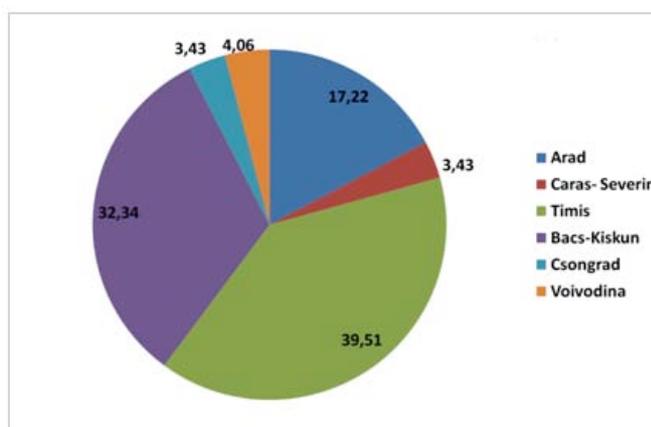


Figure 8. Area cultivated with vine, DKMT, 2008, (%)

For the arable areas exploitation there are not significant differences. In all three regions, the cereals give the determinant agricultural production. In DKMT counties, less in Csongrad County, where the wheat culture is predominant, the maize culture is dominant, followed by wheat.

In Figure 9 we can see that the higher corn production is found in Voivodina, with 67.52% and the lowest, 1.51%, in Caras-Severin County. Both the Hungarian and the Romanian sides present values just over 16%. In Figure 10, in terms of wheat production, we observe a similar situation: Voivodina has a wheat production of 44.7% of the total, followed by Hungarian counties with 29.25% and Romanian counties with 26.05%. The lowest production is in Caras-Severin.

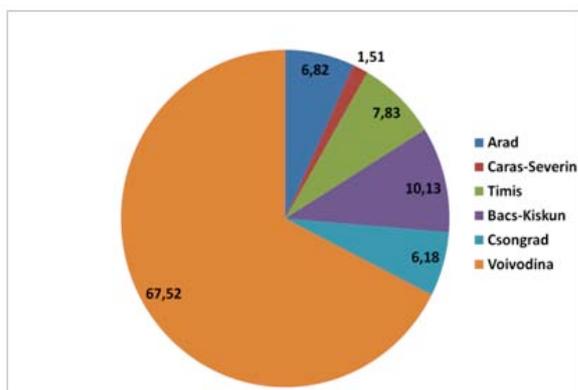


Figure 9. Total corn production, (%), 2008

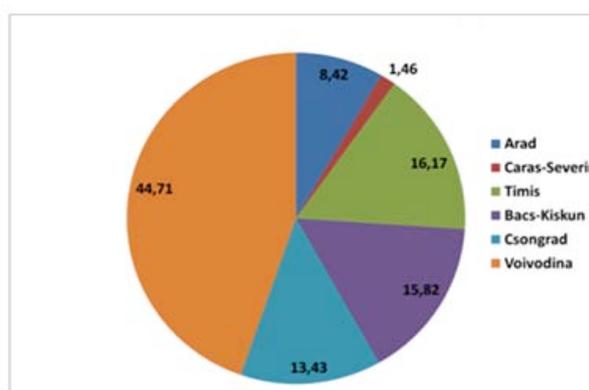


Figure 10. Total wheat production, (%), 2008

For the sunflower production, Voivodina holds the highest production with 61.01% (as we can notice in Figure 11) and Caras-Severin County the lowest with only 0.19%. The Hungarian side holds 25.41% and Romanian side 13.59%.

The situation changes a little, in terms of potatoes production (Figure 12), such as the Romanian counties hold the highest weight of the total potatoes production in DKMT Euroregion with Caras-Severin County leading and also with the lowest production in Arad County. Voivodina deals 32.14% and the Hungarian side 27.23%.

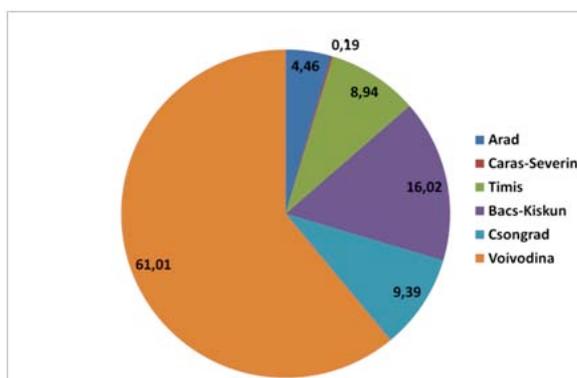


Figure 11. Total sunflower production, (%),

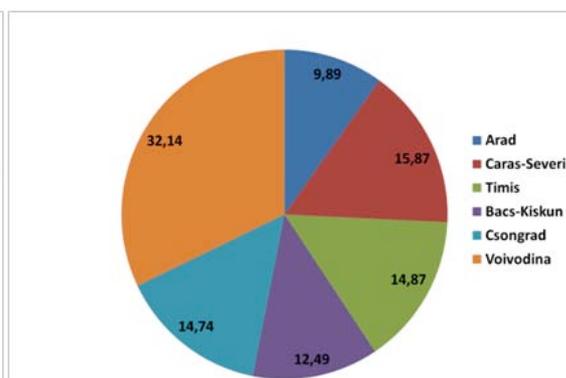


Figure 12. Total potatoes production, (%), 2008

In Timiș there are more than 42000 ha cultivated with barley and in Voivodina more than 56000 ha. Sugar beet cultivation is endangered in Hungarian and Romanian regions, trying to maintain in Arad on 639 ha, but still retains a considerable area in Voivodina (59137 ha in 2009). Regarding the area cultivated with oats, we note 5110 ha in Csongrad, 4221 ha in Bacs-Kiskun and only 1174 ha in Voivodina.

To better understand these total productions, we made a graph (Figure 13), where we note a big difference in terms of potato production, sunflower, wheat and corn, Voivodina leading the Hungarian and Romanian counties. It can be observed that the corn production is about 4 million tons, compared to Caras-Severin County, with an annual production around 89000 tons.

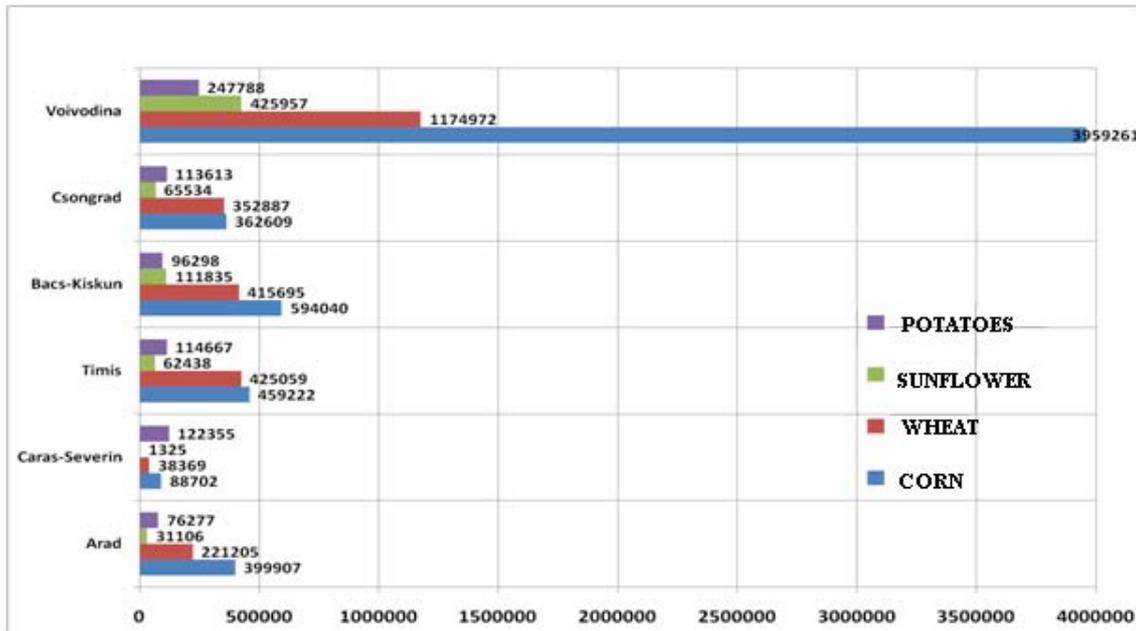


Figure 13. Total production in 2008, tons

The biggest vegetable areas are in Voivodina (18673 ha), followed by Arad County with 15363 ha and Timisoara with an area of 11051 ha. For Hungarian Counties, the vegetables area is: in Bacs-Kiskun, 8300 ha and Csongrad, 4300 ha. The smallest vegetable areas are in Caras-Severin County.

The apple production was 56.74% in Voivodina, followed by the Hungarian side with 30.58% and Romanian side with only 12.67%. The lowest apple production was recorded in Caras-Severin County (Figure 14).

Concerning the pear production, we can see in the graph below (Figure 15) that Voivodina deals 92.43% of the total production in Euroregion, followed by in Bacs-Kiskun County with a share of 3.19%.

In contrast, the peach production deals an important place in the Hungarian Counties, with a rate of 84.2% (Csongrad being the county with the highest production), followed by the Romanian counties and Voivodina, each of them having more than 8% (Figure 16).

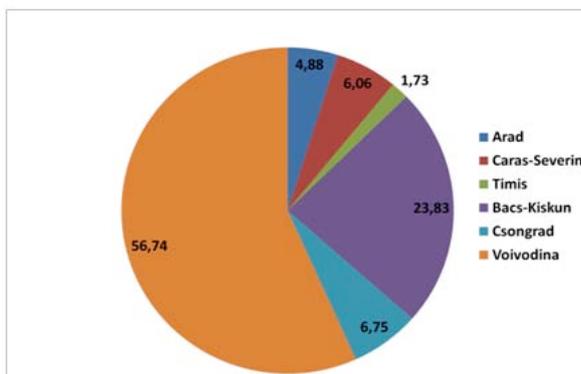


Figure 14. Apple production, 2008, (%)

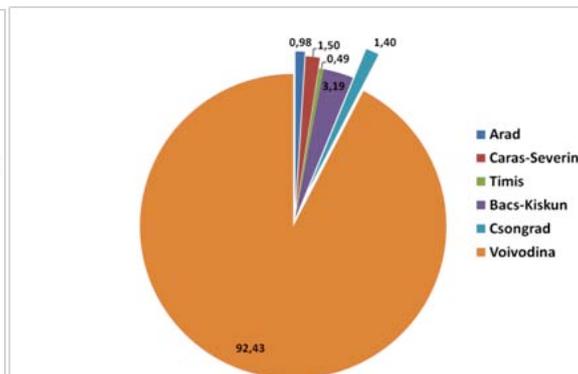


Figura 15. Pear production, 2008, (%)

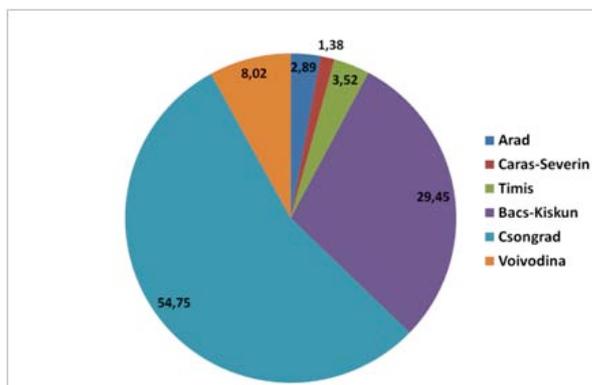


Figure 16. Peach production (%), 2008

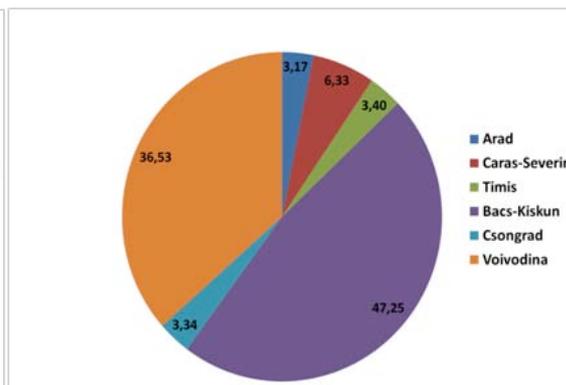


Figure 17. Cherry production (%), 2008

For the cherry production, in the figure 17, we can see that the Hungarian counties have a rate of 50.50%, of which Bacs-Kiskun County with 47.25%. Voivodina has a rate of 36.53% of the total cherry production in Euroregion, followed by the Romanian side with only 12.9%, Arad County holding the lowest production.

From the analysis of statistical data we can notice that the Hungarian region owns a very high value concerning the apricot production (over 9400 tons), especially in Bacs-Kiskun County and a low proportion in Romania, with only 750 tons.

The achievement of the graph (Figure 18) with total productions, concerning the main fruits, was made in order to be able to understand more detailed that the apple production in Voivodina has the highest value, over 82000 tons, compared to Timiș Romanian County with the lowest value, slightly above 2500 tons. The same situation for the pear production, Voivodina presents a much higher value than the other counties. The Hungarian counties, Bacs-Kiskun and Csongrad, present the highest peach production, the lowest production being in Caras-Severin County, with only 315 tons. For the cherry production, Bacs-Kiskun County ranks first in Euroregion, with a production of almost 14000 tons, followed by the cherry production of Voivodina, with more than 10000 tons.

The weaker productions of Romanian counties reveal the current situation of today agriculture. Agricultural areas were crumbled, the cultivation methods made in cooperation are increasingly rarer, having as result the car park aging process and a surpassed production mode. (Központi Statisztikai Hivatal, INS, 2010, pag. 83).

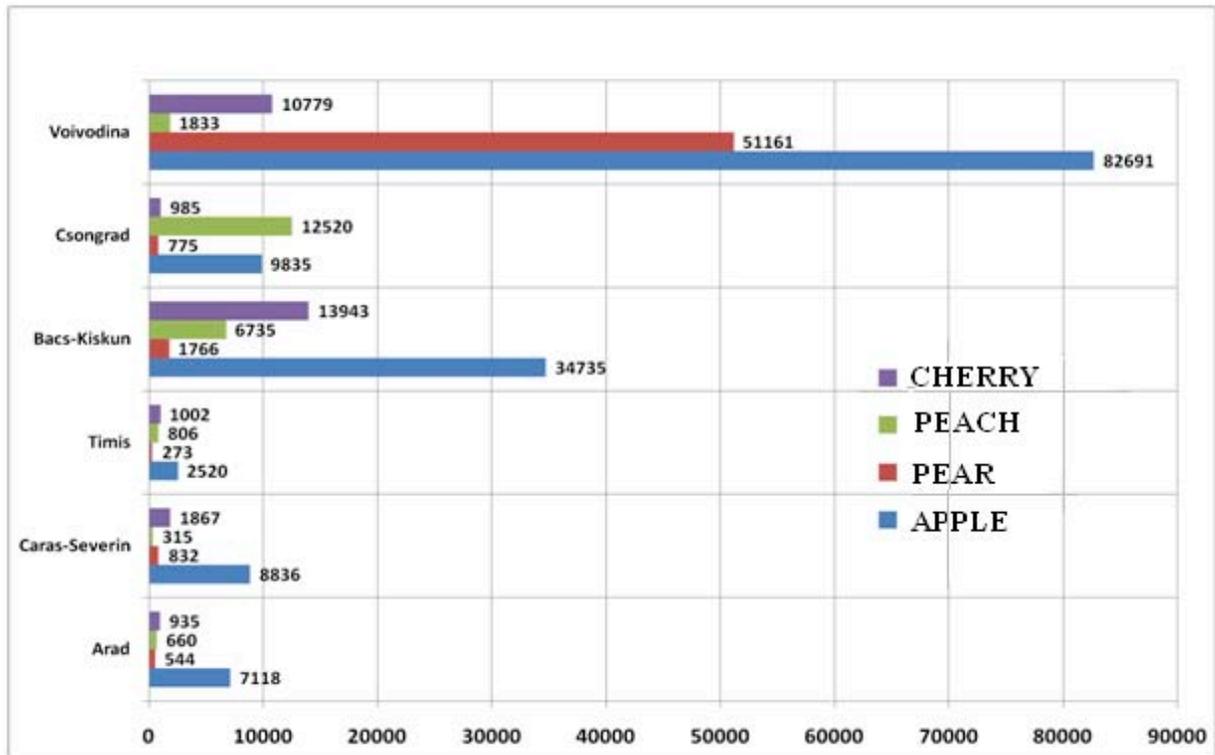


Figure 18. Total fruit production in DKMT Euroregion, tons, 2008

Comparing 2000 to 2008, we can see that the number of cattle decreased in all the three regions. From the graph (Figure 19), we note that most of cattle are in Voivodina with less over 100000 heads, followed at a distance large enough by Arad, Bacs-Kiskun and Timiș Counties. Csongrad County has recorded the lowest cattle value. The cattle meat production has been 4745 tons in Caras-Severin and 4228 tons in Timiș County. The milk production was 1134000 liters in Caras-Severin, followed by Timiș with 988000 liters and Voivodina with 384000 liters.

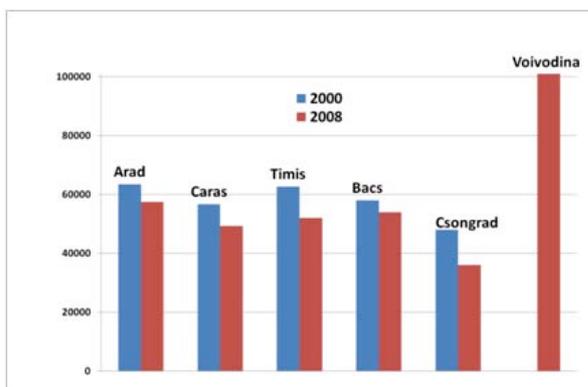


Figure 19. Number of cattle

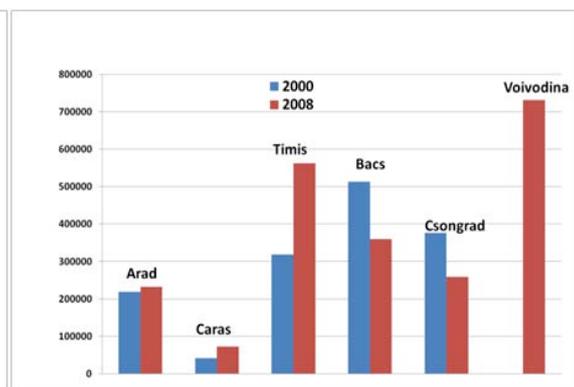


Figure 20. Number of pigs

The situation concerning the number of pigs is not similar to cattle because in the Romanian counties their number has increased compared to 2000's but declined in the Hungarian counties. The highest share is also represented by Voivodina, with more than 730000 heads, followed by Timiș County with 560000 heads. Caras-Severin County has the

lowest value for the pig number. Pig meat production has been 11645 tons in Caras-Severin County and 60167 tons in Timiș County (Figure 20).

In figure 21, we see that Timiș County holds the highest value concerning the sheep number, with more than 510000 heads, followed by both Vojvodina and Caras-Severin Counties, with more than 250000 heads. The lowest value can be found in Csongrad County. It could be noticed an increase of sheep number, compared to 2000 but with a slight decrease in Caras-Severin County. The sheep meat production has been 2449 tons in Caras-Severin and 6297 tons in Timiș County. The wool produced in Timiș County had a value of 1185 tons, followed by Vojvodina with 512 tons and Caras-Severin with 492 tons.

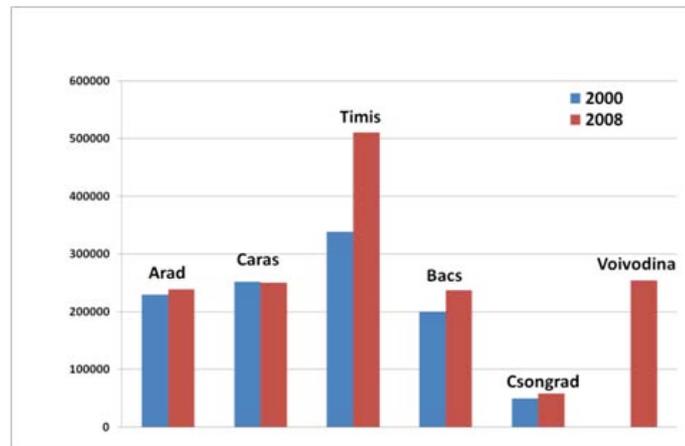


Figure 21. Number of sheep

Only in the case of the poultry, the Hungarian region owns over 11 million, followed by Romanian region with over 5000000 and Vojvodina with 3.5 millions. The egg production has been over 397 million in Vojvodina and over 330 million in Romanian counties.

In 2008, the honey production reached 1173 tons in Caras-Severin, 414 tons in Timiș and 738 tons in Vojvodina.

For the production structures, we found that, both for Hungary and Romania, the number of agricultural holdings belongs to the category of less than 0.5 ha.

Discussion

There is an important agricultural potential in the Euroregion. But how should it be exploited? Would a specifically agricultural policy be a solution in the Euroregion? Therefore, it is necessary to evaluate the actual agricultural programs and to make a thorough analysis of the agricultural potential, in order to implement a development policy (or program).

A few perspectives: projects achievement, with high added value for red fruit culture, sericulture, apiculture, etc; Euroregional products promotion, development of the cost farms by joining the small farms, encouraging the modern associative forms in agriculture and last but not the least, negotiating with the EU on the chapter "Agriculture", taking into account the real productive potential of agriculture, making easier Serbia's accession to EU.

The agricultural priorities that must be in accordance with those European will be identified and those related to the regional good agricultural practices in order to increase the farms competitiveness, to ensure the agricultural products, to use biomass as an alternative energy.

The entire Euroregion and its each component regions should be able to ensure the basic nutrition from its own resources. Currently, in the Romanian side this doesn't occur. For the entire agriculture and food industry development in the Euroregion, a strong regional

cooperation should represent a big advantage, especially for the component regions unevenly developed. (Hans, pag 14,).

Acknowledgement

The publication of this paper was financially supported by the project POSDRU/CPP107/DMI1.5/S/80127 “Doctoral studies for training in research (FOR-CE)”.

I want to thank Ms. Csilla BARDOS for providing all the Hungarian statistical data I needed. Also, I want to thank Ms. Eva FENYVESI, from the DKMT secretariat, for her time and for providing me the material related to the studied Euroregion.

References

Popa N., (2006), *Deschideri și reticiențe în România față de dezvoltarea fenomenului transfrontalier*, Note de curs;

Rieser H.H., *Dezvoltarea economică în Euroregiunea Dunăre-Criș-Mureș-Tisa. La ce ne putem aștepta și ce este de făcut?*, Redactat și publicat: Friedrich-Ebert-Stiftung, Reprezentanța în România, Bucuresti;

***, *Asemănări și deosebiri între regiunea ungară Dél-Alföld și regiunea românească Vest*, 2010, Központi Statistztikai Hivatal Szegedi Igazgatósága, Institutul Național de Statistică, 2010;

***, *Strategy for the Danube – Kris – Mures – Tisza Euroregion*, Commissioned by DKMT Euroregion Development Public Benefit Company;

***, Institutul Național de Statistică, www.ksh.hu

***, Institutul Național de Statistică, www.insse.ro

***, Institutul Național de Statistică, www.rzs.rs.ba