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THE STRUCTURAL CHANGES IN SLOVAK AGRICULTURE AFTER ACCESSION TO THE EUROPEAN UNION

Abstract. The main objective of this scientific paper is to present development trends in the agricultural sector after the accession of Slovak Republic to the European Union. The results are based on database of the Slovak Statistical Office, as well as of the Information Letters of Slovak Ministry of Agriculture and Rural Development. The time horizon involves the years 2000-2015. The focus is given on the agriculture's contribution to the national economy, as well as to the development of production structures and to the trade with agri-food commodities. Stemming from this, the indicators that reflect the state and development in the sector are related first of all, to the share of agriculture on GDP, the share of agri-food sector on Slovak foreign trade, to the economic results in agricultural farms and enterprises, to the acreage of utilized agricultural area, gross agricultural production and to the share of food, beverage and tobacco on consumers spending, Furthermore, the analysis is carried out in relation to the number of agricultural enterprises, their division according to legal forms. Specific attention is dedicated to the employment, age and educational structure of employees. The achieved results are confirming that the EU accession had the positive impact on the development of foreign trade, on the growth of a crop production, as well as on the farm profitability. However, less favourable was the development in the animal production in which had been noted significant production declines.

Keywords: European Union, agriculture, trends, development, impact.

Introduction. EU accession has had an overall positive impact on the agriculture of new EU states (EU-13). The enlarged EU market, containing around half a billion people, offers great opportunities for their agricultural sectors; EU accession increased farmers' incomes; the accession has provided a uniform agricultural policy and institutional framework, under which national agricultural policies are implemented. However, besides these benefits, several difficulties of EU membership have emerged. Also, after more as one decade from accession of Slovak Republic to the European Union (EU), the state of the Slovak agri-food sector is less developed as it was hoped. Present Slovak agriculture is characteristic with decline of its economic importance, the agricultural production dropped as well, there is the growth of foreign trade deficit with agricultural commodities, significant decrease of employees number alongside of the whole food chain, and surprisingly high downturn of agricultural land area, due to that this is used for other than agricultural purposes. There is also non-favourable development of demography with regard of aging and this is valid not only for rural population, but in general. Having in mind the necessity of the enhanced agricultural performance and the real utilization of agricultural potential is important to harmonise unbalanced proportions among economic indicators and to create favourable environment for balanced development.

Stemming from the listed authors dealing with EU CAP topics, the objective of this article is to interpret that how the EU accession has had affected the structural changes of the Slovak agriculture.

1. Literature Review. According of Csaki-Jambor (2010), the one of the challenge of the EU accession is a large, rather competitive market, where the farmers from new member states have limited potential to withhold competitive pressure. This situation is due to the rapid emergence of vertically coordinated

food chains including hypermarkets, supermarkets and multinational agro-processing companies with regional procurement systems, thus creating new and much more competitive conditions both for producers and consumers. **Šikula et al. (2003)**, outlined that in the pre-accession period, among the strong sides of Slovak agriculture belonged the diversity of natural resources which supports the multifunctional agriculture, high educational standard of working forces and relatively high food quality, competitiveness of the crop production sector, good pre-conditions on the organic agriculture, diversity of regional and local production, good conditions for rural tourisms and the utilisation of their non-agricultural activities in frame of rural landscape.

In connection with accession of the Slovak Republic to European Union, **Kadlečíková et al. (2014)** state that the expectations and priorities linked to this process were dominated by the need to ensure food security, provision of a safe, healthy choice of food at transparent and affordable prices, enhanced productivity through research and innovations; higher farmers income, profit, rural employment and ensuring food chain transparency. According of **Serenčěš (2010)**, still, after EU accession is agriculture continuing to be the important sector of national economy, which provides basic services in favour of public interests by safeguarding the natural resources and the culture of the countryside, which is the basic condition for all human activities. **Biró et al. (2017)** wrote that in Slovakia is large disintegration of the land and consequently the high number of owners hinders the development of the land market.

However, the agricultural policies are changing, according of **Fresco-Poppe (2016)**, it is important to establish strategies which make possible to set up new systems for farming. They also have to enable food chain actors to be equipped with detailed information/data capturing. In the years ahead we will face a deluge of data as sensors, satellites, robots and all types of machines are widely adopted. This may raise productivity, improve food security, make farming more climate-smart and solve environmental issues. In addition to this,

if the unbalanced knowledge and information sharing will continue, then this could also lead to greater inequality in agriculture. Those who know about innovations could immediately adopt them, and they will logically grow faster in comparison with those who are disadvantaged in the existing knowledge/innovation sharing system. The EU environment is changing also the role of managers who have to work with new techniques, methods and managerial tools.

2. Methodology . The submitted scientific article deals with evaluation of the development of agricultural sector, starting with pre-accession period and continuing by the development after the EU accession and ending with year 2015. The secondary information and data used in this article have been obtained from the Green Reports of the Ministry of Agriculture and Rural Development (MOARD) in frame of the years 2001-2016. Furthermore, the information and data were achieved from final reports of the research tasks of the Research Institute for Agricultural Economic and Food Production in Bratislava, as well as the relevant data have been acquired from the Statistical Office of the Slovak Republic. The data were further processed by the statistical methods through creating the time orders and calculating the growth indexes. The elaboration of the data was carried out by the support of table processor MS EXCEL 2016 for the primary elaboration, organization, data adjustment, the creation of graphic outputs and tables.

3. The Development Trends in Agricultural Sector . Agriculture in Slovak Republic was perceived till 1990 as consolidated sector. It provided the employment for 17 % of citizens. Thanks to the government subsidy policies, the foodstuff was cheap and more as 95 % of it was produced in Slovakia (67 % in 2015). The role of agriculture in a national economy is best characterised by the share of agriculture in GDP, which is shrinking all over the world. This tendency appeared also in the Slovak Republic, as well. The share of Slovak agriculture on GDP was in 1989 the 10, 7 %. The main changes in agricultural

sector have been launched in 1990. The Federal Government of former Czechoslovakia accepted the decree no. 689/1990 about economic reform of agriculture and food processing industry. The substance of this decree was the price liberalization and subsidies restriction in this sector. In 1993, in the first wave of agrarian reform, the 40 % of employees were separated from sector (more as 140 thousands persons), from the total number of people, employed in this sector. The declining tendency, both in agriculture and food industry is persisting up to date; the sector is substantially affected by the events of recent decades. The farmers have benefitted from financial support through the CAP, the open market and elimination of trade barriers have exposed to agri-food sector the high competition from the EU-15 states. In 2015, the share of agriculture on the GDP dropped on the level of 2, 9 %. From the data analysis (2001-2015), we can state that the more challenging for Slovak farmers were financial and global economic crises (2008-2010), as the EU accession. During these years the GDP declined even on 2, 50 %. (Table 1). The overall decline the share of agriculture on GDP after the EU accession was about 1,1 %.

Table 1

The Share of Agriculture on GDP in Slovak Republic (%)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Difference
3,69	3,76	4,00	4,70	4,70	3,23	3,60	2,80	3,10	2,50	3,10	3,30	2,70	3,00	2,9	-0,79

Source: Information Letters of MOARD of SR from period 2001-2016, own elaboration

3.1 The Development of Agricultural and Food Processing Sectors

'Share on the Foreign Trade of Slovak Republic. The accession has had a significant impact on agri-food trade in the EU-13. First of all, the value of agri-food trade has measurably increased in nominal terms after 2004. The share of agri-food sector on the foreign trade of Slovak Republic after its accession to the EU, has been immediately improved due to the free movement of goods. Regarding agri-food trade performance, it can be concluded that both export and import has increased in nominal terms after accession. However, agri-food trade

growth in nominal terms has not resulted in an improvement of agri-food trade balance in most cases, as indicated by Figure 1.

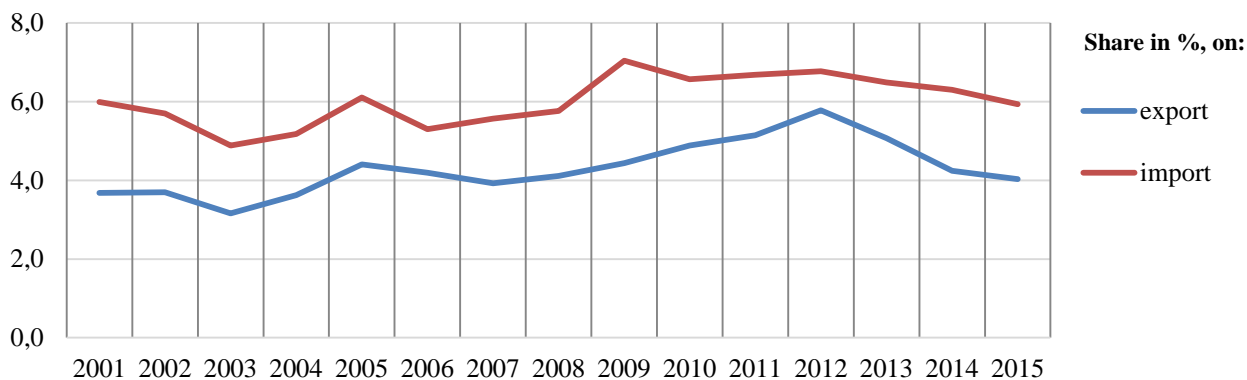


Figure 1. The Development of the Foreign Agrifood Trade on the Total Foreign Trade of Slovak Republic

Source: Information letters of MOARD of SR for the period 2001-2016, own elaboration

The reason is stemming from the fact that the domestic final production declined and the share of semi-processed or row products was increased in the agri-food export. Moreover, there was a high and increasing share of raw materials in agri-food export.

In this field it is important to utilize legislative tools on the market support. In addition to this, higher attention should be paid to the policy which will more effectively support export of Slovak agri-food commodities and to provide such a measures which will lead to the higher competitiveness of Slovak products.

The development of the profit/loss from agricultural production is another key indicator of assessing the impact of accession. As Table 2 suggests, there are three critical years for the development of agricultural efficiency starting with 2003, then in 2009, as well as in 2013.

In 2003, the one year prior our EU accession, the agriculture was in the deficit of 78, 9 mil. Eur. In next year 2004, the economic results had been significantly improved. This trend continued up to 2008. Various factors, beside the EU CAP, participated at these results, especially more rapid increase of

realization prices of agricultural commodities, However, in 2009 the agricultural sector was again in the losses (-112, 8 mil. Eur), which were caused by global economic and financial crises, high input prices, volatile producers prices and the flood's negative impacts in this year, (-112, 8 mil. Eur). These negative results were also caused by the existing unbalanced support system among various EU member states. After overcoming majority of the above mentioned difficulties, agricultural production achieved in 2015 positive economic results 30, 5 mill. Eur. In comparison with 2014, the economic results declined about 30, 2 mill. EUR. According of the volatile development of this indicator, we can state that sector is very fragile and sensitive on the number of changes in its internal and external environment. Despite of the all volatility effects, the official data confirm that in the period 2015-2001 the profit in agricultural entities had been increased about 82,6 % (Table.2).

Table 2

Development of the Profit/Loss Indicator in the Sector (mil. Euros)

															Difference 2015- 2001	Index 2015/2001
2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	13,8	182,6
16,7	15,8	-78,9	52,2	-9,9	43,5	10,4	54,7	-112,8	13,9	73,6	35,0	-2,5	65,7	30,5		

Source: Informative Letters of MOARD of SR for the period 2001-2016, own elaboration.

In frame of V-4, the lowest support policy in agriculture had Slovak Republic. From this point of view, the significant change happened for Slovak farmers in 2004, when due to EU accession, the support of the sector was positively changed. The support structure was affected by the increased direct payments, despite that in comparison with EU-15 farmers, these payments represented only 25 % in 2004. In this regard, significant upward trend happened also in 2009. Direct payments became financial stability's pillar for agricultural enterprises. This is the fact, despite that Slovak farmers are aware of their underestimation in comparison with their colleagues from EU-15. This is obviously affecting the lower competitiveness of our farmers. In comparison

with the starting year of our observation, the direct payments had been enhanced about 286, 9 mil. EUR (figure 2), (index 2015/2001 = 392, 5).

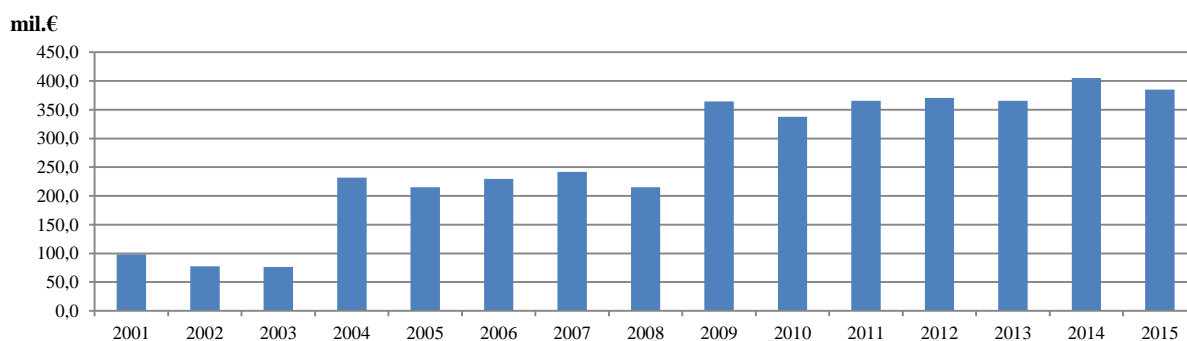


Figure 2. The Development of Direct Payments from 2001 to 2015

Source: Information Letters of MOARD of SR for the period 2001-2016, own elaboration

The direct payments together with other supportive tools are participating in very meaningful way on the total income of entrepreneurial units in agriculture. The share of total support on the income from the year 2001 was increased from the share 13, 8 % on 36, 7 % in 2015. The biggest impact of supports was noted in the years of global and financial crises (2008 to 2010), after this until 2014 the share of direct payments and other supports had the declining tendency. and in 2015 was registered growth, due to the additional payments from the Programme of Rural Development 2007–2013, as well as from the new Programme of Rural Development 2014–2020 (Figure 3).

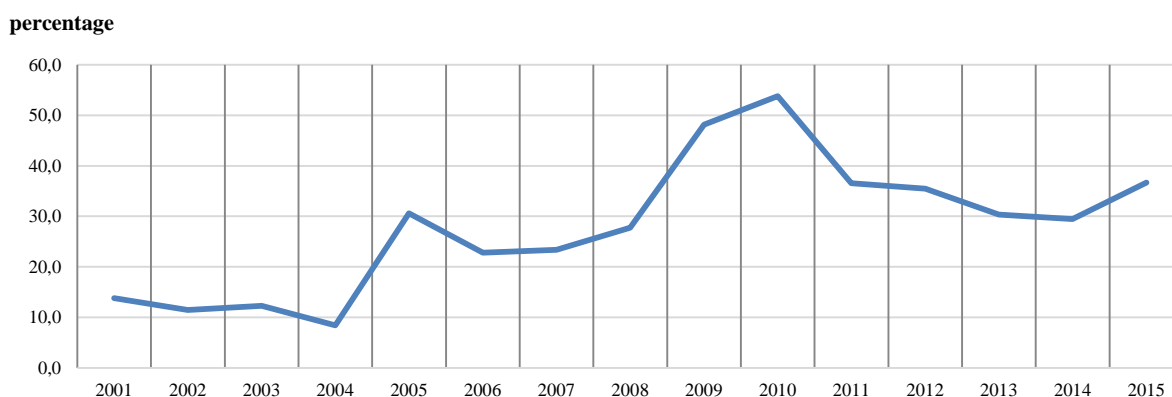


Figure 3. The Share of Supports on the Farms' Incomes in the Period 2001-2015

Source: Information Letters MOARD of SR for the period 2001-2016, own elaboration

3.2 The Development in the Use of Agricultural Land. Land is representing the most substantial natural and production tool and entrepreneurial resource in agriculture. Today, in some states it is also the mean for political fighting. Even during our pre-accession negotiations with EU, it was accepted the exception, that if the foreign businessmen would like to buy the Slovak land, then they have to meet certain preconditions. This exception was valid until 2014. Despite of this, according of the MOARD SR's unofficial data, approximately 135 000 hectares of land, are in the hands of foreigners. Very recently, in May 2017 was accepted the Constitutional Law, which is strengthening the land protection, which is by this change defined not as the good which can be marketed, but as the natural resource for which are relevant special conditions.

In 2004, the acreage of agricultural and in Slovakia was 1 934 659 hectares. However, this indicator is continuously decreasing during the analysed period. In comparison with the beginning of the evaluated period the decline was noted about 333 000 hectares (index 85, 2) of the utilized agricultural land, and about 59 000 hectares of arable land (index 95,8, or 4,2 %). In Slovakia, on daily basis from 2004 is less agricultural land about 2, 33 hectares (Figure 4). These declining tendencies are caused by decreasing of the meadows and pastures' acreages. The significant challenge is that agricultural land is more and more used on the construction of industrial entities, on the highways etc.

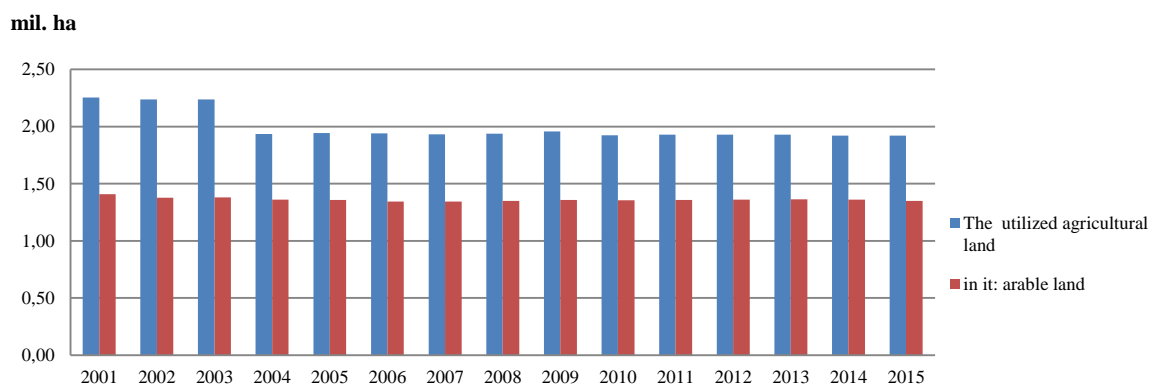


Figure 4. The Acreage of Agricultural and Arable Land from 2001 to 2015
Source: Informative Letters of MOARD of SR for the period 2001-2016, own elaboration

The serious problem of Slovakia is that 75 per cent of agricultural land is owned by private persons. The major disintegration of the land and the high number of owners hinder the development of the land market. On average almost 90 per cent of agricultural subjects operate on rented land. The best-selling type of land is arable land. In 2014 the land market price, on average was 1260 Eur per hectare. However, it has to be underlined, that relationships between prices in market are differentiated according to quality of the land. Another factor limiting the land market is high transactions costs. The price of agricultural land in Slovakia is below the level of the EU-15. The great challenge is that the land market is too slow due to unarranged property issues. More as 360 thousands of hectares belong to the so called unidentified owners. The already mentioned challenge is the farming on the rented land. This reality represents, in comparison with the period prior the social and political changes, the new factor, even complication. This is due to that it is limiting the opportunities of the people, who have interest to do the business on the land. This is valid first of all for young farmers.

3.3 The Development Trends with Regard of the Gross Agricultural Production The year 2001 was for the Slovak agribusiness-men exceptional owing to the great drought which was in previous year. This situation required number of measures in the year of crisis, but also to provide targeted support from the so called compensation sources in 2001. The overall farmers support was in this way significantly increased. This growth continued up to 2008-2009 period, when due to the financial and global economic crises, as well as the decline of prices for farming outputs, the Gross Agricultural Value (GAV) once more very sharply dropped. This indicator moderately increased in 2010, due to the crop production and this trend is continuing up to date, despite of the volatile prices of agricultural commodities. With regard of the production structure, is prevailing during the evaluated period the crop production (56, 5 %) beyond the animal production (43, 5 %). The decline of animal commodities in

the human nutrition, as well as their increased import from the other states, after our accession to the EU has caused the sharp downturn of animal production's total output. The Index of this indicator for the period 2015/2001 expressing the decline of total agricultural production about 2 %, the growth of crop production about 16, 1 %, and the decline of animal production about 19,1 % (Figure 5).

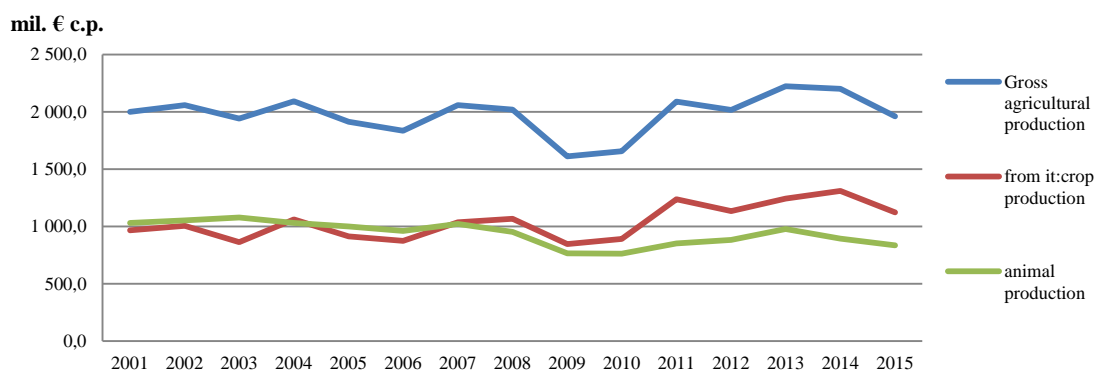


Figure 5. The Development of Agricultural Production in the Period 2001-2015

Source: Information Letters of MOARD of SR for the years 2001-2016, own elaboration

Stemming from the above results, the conclusion is that accession to the EU caused only moderate decline of GAP, however, there is noted significant increase of crop production, while in the animal production was registered dramatic decline. EU accession has also had a significant impact on agricultural prices and incomes. Significant increase has occurred in EU-13 agricultural producer prices in nominal terms, while real producer prices have still remained below EU-15 levels. Price adjustment was larger in countries with lower pre-accession levels.

From the Figure 6 is obvious that the number of farm animals from 2001 noted continuous declining trends. Despite of the EU and domestic supportive policies towards of agriculture, it was almost impossible to stabilize the number of the livestock. This was caused by the low competitiveness of farmers, who were not in the position to sustain the pressures from the side of foreign importers, also to the very low output prices of the meat, especially the milk. In

meaningful way, were declined in the last years the number of pigs due to low prices.

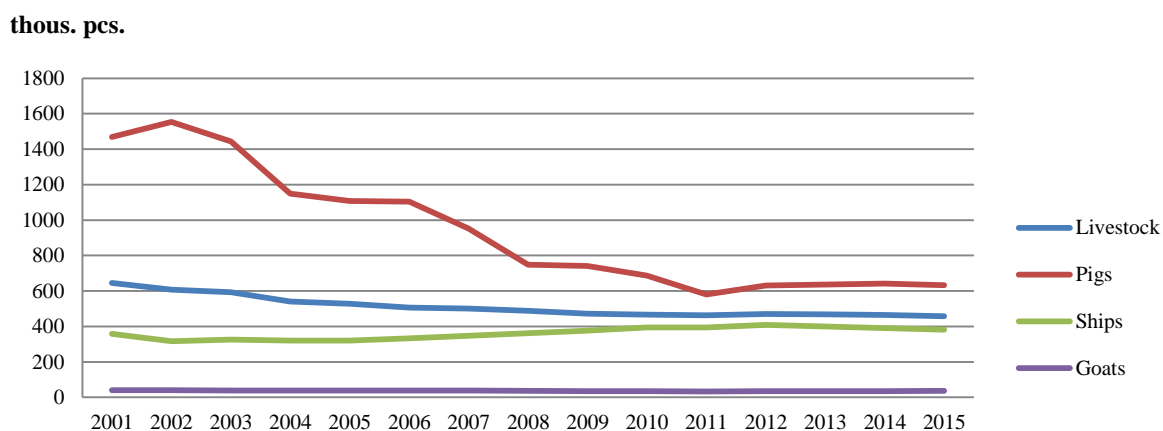


Figure 6. The Development of Farm Animals Numbers in the period from 2001-2015

Source: Information Letters of MOARD of SR for period of 2001-2016, own elaboration

Even in the last evaluated year, the numbers of the all farm animals were downsized. In the years 2001-2015 the most significant declines have been noted in the pig production, even about 56, 9 %. These changes, in the structure of agricultural production had serious impacts on the organizational, economic and production-structural aspects, but also on the decreasing trends for their agricultural employment in the agricultural entities.

3.4 The Development of Agricultural Entities' Number and their Legal Forms. The agricultural business environment was in the last 25 years affected by the social and political development, legislation, and the EU Common Agricultural Policy. The development of business structure in this sector was differentiated according of diverse entrepreneurial conditions and the various demands. In 2004, after Slovak's accession to the EU, the number of business entities had been increased. Recently, the agricultural cooperatives are significantly replaced by the trade companies. The number of agricultural cooperatives dropped about 79.3 (Figure 7). Despite of this fact, the cooperative farms have the prevailing position with regard of the cultivated area. Up to date, they are providing the farming on the area of 36.8 % of total agricultural land.

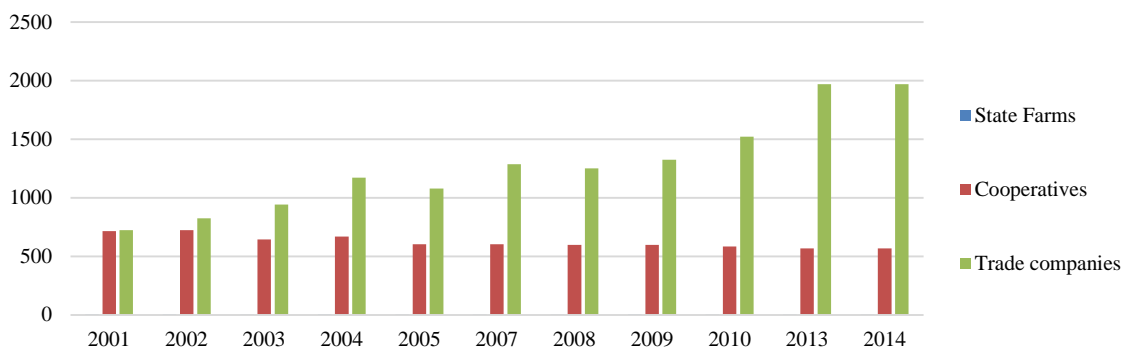


Figure 7. The Development of Agricultural Entities' Numbers According of the Legal Forms

Source: Informative Letters of MOARD of SR for the period from 2001-2016, own elaboration

3.5 The Organic Farming. The organic farming is the new era phenomenon in the Slovak circumstances. Its organized system was established in 1991. In the year 1998 was accepted the first Law about the Organic Farming and about the Production of Biological Foodstuff, (no. 224/1998 Z. z.), and also was established the independent controlling system and certification of ecological production. In 2015 in the Register of organic farming's production have been listed in total 552 farming units. From this, the highest share was 416 farming units on the land (75, 4 %) and 4 bee producers. The total registered area of agricultural land in 2015 represented 186 483 hectares (9 % of total area). From the livestock the organic production is first of all concentrated on the sheep, then on the cattle, poultry, goats, horses and bees. With regard of the average size of holdings in Slovakia is 476.2 hectares for organic farms compared with 80.7 hectares of average size of all holdings.

3.6 The Employment and Qualification of Agricultural Employees. In 2001 had been working in agriculture 106, 4 thousands people. This number was relatively stable up to the time of global economic and financial crises. In 2010, despite of accepted measures on the employment support, the stabilization programme of agricultural employment has failed. The main reason stems from the low salary, which is below the average level of the national economy. The interest about the work and entrepreneurship in agriculture is so far on low level. In 2014, the long-lasting decline of agricultural employees was stopped. This

was caused by the production diversification, finalization of production and the income's growth from the additional non-agricultural activities, first of all from agro tourism. By this, more new job opportunities have been created. However, in 2015 was noted further decline of employment (57, 9 thousands employees). In all, we can conclude that number of working forces in agriculture between years 2001 and 2015 was downsized on the 48,5 thousands of people (Figure 8).

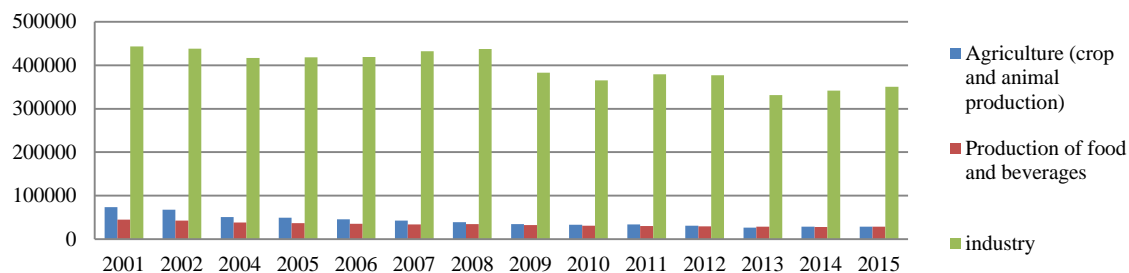


Figure 8. The Development of Agricultural Employees in the Selected Sectors

Source: Information Letters of MOARD in SR from the years 2001-2016, own elaboration

Agriculture is very sensitive on negative weather volatility. This fact forces the agribusiness men to undertake more advanced forms of employment. Actually, this is about the flexible release and employment of working forces according of the production structure and the actual season. In any case this reality is increasing the requirements on the organizational capabilities and managerial competencies of the agribusiness men.

With regard of the pertaining low interest about the work in agriculture, is agricultural population aging, the number of the oldest generation is increasing (60-64). In 2015 it was 6 %. In the age up to 44 years, in the sector works only 34.7 % people, while beyond of this age category (45 years) are employed the rest 65.3 %. This situation is not sustainable and also cannot be indicated as optimistic one. On behalf of the generation exchange, it is important immediately accept new measures, both from the EU side, as well from the Slovakian Government, in order to accept effective solutions, in order to make from agriculture more attractive sector for younger age categories.

The changes in the employees structure from the qualification point of view in positive way affected the enhancement of the university educated employees, even about 4,8 % more (in total about 9,2 %). It was also increased the share of employees with secondary technical education about 6 %, declined the share of employees with primary education from 16 % in 2001 on the 8.3 % in 2015. The underestimation of the functions and missions of the vocational schools was launched by the reform of public sector in 2001, and this reform caused the number's decline of vocationally prepared people from 56.7 % in 2001 on 54.3 % in 2015.

4. Conclusions. The analysed results suggest that EU accession has had an overall positive impact on agriculture. The review of developments in the Slovak agricultural sector, lead us to a number of conclusions. First of all, EU accession has had a significant impact on agricultural performance. The role of agriculture has further decreased in the national economies, agricultural output dropped about 2 %. Regarding agri-food trade performance, it can be concluded that both export and import has increased. EU accession has increased farmers' incomes as well as provided a uniform CAP policy and institutional framework under which national agricultural policies are implemented.

However, besides these benefits, several difficulties have also emerged after accession such as the limited potential to withhold competitive pressures, the lack of harmonised support levels, the handicap of small farmers and the rural-urban income gap should be emphasised.

The importance of the agricultural sector was significantly declined and it is not belonging anymore among the priorities of governments, despite of some political declarations. Somewhat was decreased the share of agricultural sector on the GDP. The same is valid about the decline of the number of people employed in this sector. Dramatic is the development in the animal production which performance dropped about 19.1 %. From 2006 was sector significantly affected by the volatile food prices. This brought the great pressure on the

agribusiness-men, who started with diversification of their production and also with rationalization measures. The cooperative farms are slowly replaced by the other legal forms of companies, mainly with individual farms. This is caused by the ideological distrust of society towards of the previous forms of farming. The all analysed other factors, had the significant impact on the management performances' of agricultural entities. Managers are also under the pressure to adopt themselves on the changed conditions and to the new management tools.

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