

THE BENCHMARKING OF AGRICULTURAL PRODUCTION AND LABOR IN AGRICULTURE IN THE EUROPEAN PLAN

Geanina-Valentina LUPU¹

e-mail: geaninavlupu@gmail.com

Abstract

In this paper we propose a comparative analysis on European agricultural production and labor involved in this activity. Rural areas have a vital social role and a significant growth potential in society. There is a diminishing in reserves of manpower in rural areas throughout the EU, especially in emergent countries. The existing projections at this time, show a growing demand for agricultural products. For those who work in this field it is essential to be able to plan and predict medium and long-term activity. In this respect, we analyze the statistics of people working in some of the EU countries to have an overview of employment in the agricultural sector. The purpose of this paper is to investigate the evolution of the two factors that influence the agriculture and the macroeconomic stability.

With the increase in the share of industry and services in the economy, agriculture begins to be increasingly less attractive and available a large number of jobs in this sector. In this respect, an important role returns to farmers in sustainable economic development, diversification of the rural economy by creating new jobs and protecting the environment. But farmers by themselves without a concrete and immediate help from the authorities cannot succeed in reducing this alarming phenomenon.

In conclusion, agriculture is an important contribution to the EU GDP and has a fluctuating and uneven route across the European Union in terms of reporting the value of agricultural production to the number of farms, their size and manpower involved.

Key words: agriculture, farming, labor, crisis

Undoubtedly, according to the latest Eurostat statistics, agriculture is still big business. The contribution of agriculture to the GDP of the European Union was 1.2%, which is an important contribution. This article represents a real and objective analysis on developments in European Union member states. The data were processed according to Eurostat referring to the agricultural sector. In this analysis we address several important aspects. Firstly, we will discuss the potential of agriculture, i.e. the production of cereals in the EU. Secondly there are given in graphs and analyzes the development in cerealiere production, the number and structure of farms. It is showed that there are multiple possibilities for their growth. Closely related to farms it is also analyzed manpower involved in this sector and its trends.

In 2017 the agricultural industry registered a value of 432.6 billion euros. About half of this value came from four countries: France brings 16.78%, Germany 13%, Italy 12.73%, Spain 11.70%. To achieve approximate one quarter of that total, United Kingdom contributes 7.35%, Poland 5.75%, Romania 4.04% and Hungary

almost 3%. Given these data, the following conducted study makes a comparative analysis, in the eight countries previously mentioned, of the agricultural production, its value, farms and work force employed in this sector.

MATERIAL AND METHOD

The methodological and scientific analysis of this study has as support a direct and indirect research, such as the observation, the comparison, the synthesis. The qualitative and quantitative analysis of the agricultural area and that of human resources leads to an overall account of the studied economic phenomena and processes. The theoretical part of the research was based on studying the relevant literature regarding economy and management.

We bring out that Newbold, Karlson and Thorne show the efficiency of using statistics in economy. (Newbold P. *et al*, 2010). At the same time there was analyzed the information provided by international databases, like Eurostat data, which were processed and interpreted.

¹ University of Agronomic Science and Veterinary Medicine, Bucharest

RESULTS AND DISCUSSIONS

The European Union is divided into equal parts occupied by built-up areas, infrastructure, water as well as agricultural land and woodland. (Anghelache, C. *et al*, 2016)

In 2017, the land used for agriculture was of 179 million hectares. The agricultural area includes arable land, grassland and permanent crops, kitchen gardens, without taking into account woods, ponds or other fields that cannot be used for agricultural purposes. The agricultural area of each country depends on a variety of factors such as geographical position, related climate, types of soil, state of the economy, demographics. According to statistics, in the European Union there were 312.3 million tons of grain harvested in 2017. (Key figures on Europe, 2018)

At the European Union level the estimated value of EUR 432.6 billion integrated plant cultivation, breeding, agricultural services. More than half of this production came from cereals 10.7%, horticultural plants and vegetables 13.2%, fruit 6.3%, feed 5.3%, industrial plants 5.1%, wine 5.1%, olive 2.6%, potatoes 1.2%. The remaining value was brought by animals and animal products, first places being taken by milk and pork. An increasing role of approximately 8.5% in this value it is hold by the agricultural services that are becoming more important to the industry every year.

As far as the agricultural production is concerned, it shows a fluctuating trend generally slightly decreasing in recent years.

Table 1

Change of crops output at 1000 ha in the period 1990-2018

Country	1990	1999	2012	2015	2018
Average UE	34,181.17	-	58,078.38	57,640.29	55,509.88
Germany	6,948.31	6,534.70	6,527.30	6,276.20	6,148.90
Spain	7,553.30	6,696	6,169.89	6,195.86	6,014.81
France	9,050.50	8,841.60	9,377.68	8,575.54	9,050.46
Italy	4,406.70	4,173.30	3,577.76	3,084.18	3,134.43
Hungary	2,778	2,420.60	2,757.93	2,697.70	2,378.20
Poland	8,623.40	8,701.30	7,704.30	7,511.80	7,806.31
Romania	5,704	5,370.70	5,441.28	5,471.19	5,198.96
United Kingdom	1,646	1,294.10	3,142	3,091	3,178.20

Source: Eurostat, data processed by author (online at [aact_eaa01]) - Agriculture, forestry and fishery statistics, 2018

From the statistics produced results that agricultural exploitations are numerous and diverse in size, structure, administration, what grown, reared animals. (Ungureanu G. *et al*, 2013).

In the EU, in 2016 were counted 10.5 million farms. Romania ranks first with 32.7% of EU farms, it is followed by Poland with approximately 13.5%, Italy with 10.9% and Spain. Extensive research conducted in 2016 on agriculture brought out the following (Key figures on Europe 2016):

-96% are considered family farms, which means that they are administered in the family and at least half of agricultural work is carried out only by family workers. In countries like Romania, Italy, Spain, Bulgaria, Poland, Hungary, they constitute the majority. A different trend is

recorded by France and the United Kingdom. 27.3% of the farms in France are nonfamiliale and the United Kingdom has 38.6% of such farms;

-approximately 65.6% of farms have less than 5 hectares. The European average farm is 16.6 hectares, only 15% of all farms in the EU, having this size. Eurostat 2016 shows the following percentages based on the total worked farm land: farms up to 10 hectares have 12.1%, farms to 20 hectares have 8.3%, farms up to 30 hectares have 3.5%, farms up to 50 hectares have 3.6%, farms up to 100 hectares obtained 3.6% and farms larger than 100 hectares have 3.3% of total EU farms. It is interesting to note that the farms of at least 50 hectares worked 68.2% of the agricultural area;

-combining the size criterion with that of the legal form we came to the conclusion that EU

farms are the so-called semi-subsistence farms where production is mainly used to feed the farmers's family. The second category is represented by the small and medium farms, these being family business. The third group consists large farms which have a clear juridical legal form or are cooperative farms;

-diversity is the main word when we characterize types of farms. There are considered several criteria, such as the dominant activity, what is grown or cultivated, farm specialization. Thus, a farm specialization refers to the fact that two thirds of the size of the farm is dedicated to that specific activities. Other farms have a mix of activities, hence the difficulty of strictly falling under a classification criterion. Considering the stated information, we can say that in 2016, 52.5% of farms were specialized in cultivation of which 16.4% strictly for harvesting, 15.2% cereals and various kinds of seeds, 7.6% olive, 5.1% citrus and fruits and 4.3% grapes, 1.8 % vegetables and 1.9% combined farms presented above. In the same year, 25.1% of the total were farms specialized in breeding as follows: 6.2% sheep and goats, 9.1% cattle and milk production, 4.5% chickens, 1.5% pigs, 2.6% granivorous animals. Mixed farms occupied 21.1% of all farms, being divided as follows: 10.1% of cereals and animals, 4,7% mixed farming, 6.3% animal rearing and pastures, 1.3% unclassified farms.

Of the analyzed countries, it can be concluded that in Spain and Italy, over 60%

dominate farms specialized in crop production, in France 54%, Germany 67% and the United Kingdom 75% majority are farms that rear animals, and in Romania, Poland and Hungary most are mixed farms, the percentage being over 30%.

In *tables 2 and 3* we conducted a comparative analysis for the period 2005 to 2016 of the number of agricultural farms, the land measured in hectares used for agriculture, the agricultural production value and manpower involved in this sector. It stands clear that developed countries such as Germany, Spain, France and United Kingdom have fewer farms but manage to work a greater number of hectares resulting a high value of the output of agricultural production using a small number of workers.

In emerging countries, the majority from the former communist bloc, and even in Italy, there is a problem which resides from the mentality regarding collaborative work. Distrust of others led to a large number of farms using inefficient an average number of hectares, the value of agricultural production being low given the fact that they use a large number of people. Hungary, Poland and especially Romania have a high agricultural potential. Due to a faulty organization of agriculture, these countries have failed to achieve the expected results in accordance with their efforts and available resources. (Anghel M.G. *et al*, 2017)

Table 2

Distribution of farms reported the labor force in agriculture during 2005-2016

Country	2005		2010		2016	
	Number of Farms	Employee annually	Number of Farms	Employee annually	Number of Farms	Employee annually
Germany	389,880	643,230	299,130	545,000	276,120	490,060
Spain	1,079,420	992,640	989,800	888,970	945,020	801,160
France	567,140	855,490	516,100	779,660	456,520	708,170
Italy	1,728,530	1,374,260	1,620,880	953,790	1,145,710	874,950
Ungary	714,790	462,740	576,810	453,670	430,000	391,730
Poland	2,476,470	1,014,950	1,506,620	1,897,240	1,410,700	1,649,400
Romania	4,256,150	2,595,590	3,859,040	1,610,260	3,422,030	1,587,650
United Kingdom	286,750	110,370	185,200	265,660	185,860	285,760

Source: Eurostat, data procesed by author (online at [ef_m_farmleg])- Agriculture, forestry and fishery statistics - 2018

Table 3

The evolution of hectares used in agriculture and the Standard output (SO) in the period from 2005 to 2016 euro in agriculture

Country	2005		2010		2016	
	Hectaries agricole	SO-EURO	Hectaries agricole	SO-EURO	Hectaries agricole	SO-EURO
Germany	17,035,220	44,408,435,780	16,704,040	41,494,097,650	16,715,320	49,249,020,560
Spain	24,855,130	33,625,081,990	23,752,690	34,173,689,600	23,229,750	38,365,605,150
France	27,590,940	46,527,554,360	27,837,290	50,733,216,720	27,814,160	61,343,138,670
Italy	12,707,850	40,328,283,810	12,856,050	49,460,329,710	12,598,160	51,689,024,310
Hungary	4,266,550	4,921,939,060	4,686,340	5,241,037,240	4,670,560	6,532,474,660
Poland	14,754,880	16,084,089,030	14,447,290	18,987,070,900	14,405,650	25,005,635,420
Romania	13,906,700	13,906,700	13,306,130	9,874,585,200	12,502,540	12,105,491,800
United Kingdom	15,956,960	18,695,147,080	16,881,690	19,554,979,690	16,673,270	25,403,447,340

Source: Eurostat, data processed by author (online at [ef_m_farmleg]) - Agriculture, forestry and fishery statistics, 2018

At EU level it is interesting to watch the data on the workforce involved in agriculture. In the period from 2005 to 2016 the average amount of work declined by about -2.5%, and in 2017 only -1.2%, but the trend is of the same decrease. There are important differences between Member States, Spain experienced an increase of 5.1% and Bulgaria, for example, a decrease of -6.9%. Detailed data related to this activity are rare, a

thorough analysis being carried out by 2013. (Mărcuță A. *et al*, 2016)

Agriculture is still a major employer especially in developing countries such as Romania with 23% of employees in 2018 the same recorded in Poland with 9.5%. Overall, in the EU, the number of people working in agriculture is 4.3% of total employment, as shown in *table 4*. (Agriculture, Forestry and Fishery Statistics, 2018)

Table 4

Employment rate of labor in agriculture (%)

Country	2015	2016	2017	2018
Average UE	4.8	4.6	4.4	4.3
Germany	1.5	1.4	1.4	1.4
Spain	3.9	4.0	4.0	3.8
France	2.8	2.7	2.7	2.7
Italy	3.7	3.7	3.6	3.6
Hungary	6.3	6.0	5.8	5.4
Poland	11.5	10.6	10.2	9.5
Romania	26.4	23.8	23.5	23.0
United Kingdom	1.3	1.3	1.3	1.2

Source: Eurostat, data processed by author - Agriculture, forestry and fishery statistics, 2018 edition

According to Eurostat official statistics, a large part of total agricultural labor was the self-

employed, about 6.9 million workers with individual labor contract in 2017. In the long run, in the European Union the development in employment presents a fluctuating framework which depends on several factors such as seasonality, progress in mechanization and hence

production efficiency, more employment opportunities in other sectors of the economy. (Mărcuță A. *et al*, 2014) There were exceptions to this trend, including the following Malta and Ireland, countries which are not found in the tables.

Table 5

Employment in the agriculture, forestry and fishing (age from 15-64 years, thousands)

Country	2009	2012	2015	2018
Average UE	10,171.1	9,652.4	9,057.3	8,347.1
Germany	589.5	554.9	511.3	474.8
Spain	770.3	729.7	724.8	797.9
France	733.0	722.5	693.6	641.6
Italy	784.3	778.5	785.8	810.8
Hungary	170.4	191.0	202.7	210.1
Poland	1,990.0	1,869.0	1,792.8	1,516.7
Romania	2,261.3	2,185.2	1,900.2	1,657.3
United Kingdom	280.7	297.4	286.3	282.5

Source: Eurostat data processed by author, (online data code [lfsa_egan2])

CONCLUSIONS

Studies have led to several theoretical and practical conclusions. Through its 28 member states the European Union shows that it occupies one of the first places at global level in agriculture, both in terms of number of farms, land used for this purpose and value of agricultural production.

These small farms can play an important role in reducing the risk of poverty in rural areas, providing additional income and food.

Regarding the workforce involved in agriculture in the European Union there are at least two trends related to this issue. Regarding developed countries, they have a small weight and less fluctuating employment in agriculture, but fewer people are interested in working in this field. Through politics which seek freedom and facilitate labor mobility in the Union, these countries manage to attract labor from Eastern European countries. However, emerging countries generally the Eastern European ones have a higher rate of employment in this area and show a downward trend. At the same time they face a situation where many people go to work in agriculture in developed countries leading to a shortage of labor in this sector.

Through the foregone investigations, it appears that Romania has a great potential in the

agricultural sector, but it must comply with European Union standards, notably through better management of the fund arable resources, production and labor in agriculture.

REFERENCES

- Anghelache, C., Manole, A., Anghel, M.G. 2016. *Evoluția producției agricole în România/ Evolution of the Agricultural Production in Romania*. Romanian Statistical Review Supplement, 3, p. 7-10.
- Anghel, M.G., Anghelache, C., Panait M., 2017 – *Evoluția activității agricole în Uniunea Europeană*, Romanian Statistical Review - Supplement nr. 6 / 2017;online, http://www.revistadestatistica.ro/supliment/wp-content/uploads/2017/06/RRSS_06_2017_A03_RO.pdf, accesat 24 iunie 2019.
- Mărcuță A., Purdciu Ș., Purdciu L., Mărcuță L., Angelescu C., 2016. - Economic, social and political features of workforce migration. Case study – International Business Information Management Conference (23rd IBIMA), ISBN: 978-0-9860419-1-4.
- Mărcuță A., Mărcuță L., Tindeche C., Angelescu C., Nicolae I., 2014. - *The influence of economic crisis on the labour in the European Union's member states*, Scientific Papers, Series "Management Economic Engineering in Agriculture and Rural Development", Vol. 14 (1), ISSN 1844-5640, p.201-206.
- Newbold, P., Karlson, L.W., Thorne, B. 2010. - *Statistics for Business and Economics, 7th ed*, Pearson Global Edition, Columbia, U.S.
- Ungureanu G., Chiran A., Brezuleanu S., Moraru R.A., Boghita E., 2013. - *The optimization of*

agricultural exploitation size thought effect to adapt the agro-alimentary supply to the demand of trade Vol. 14 (1), ISITES.2013 1st International Symposium on Innovative Technologies in Engineering and Science. <http://www.isites.info/PastConferences/ISITES2013/ISITES2013/papers/C8-ISITES13183.pdf>.

Agriculture, forestry and fishery statistics 2018 edition.- PDF ISBN 978-92-79-94757-5 ISSN 2363-2488 doi:10.2785/340432 KS-FK-18-001-EN-N, online la <https://ec.europa.eu/eurostat/en/web/products-statistical-books/-/KS-FK-18-001>.

Key figures on Europe 2016 edition.- Web ISBN 978-92-79-63348-5, ISSN 2315-201X, doi: 10.2785/81608 N° Cat: KS-EI-16-001-EN-NPDF online la <https://ec.europa.eu/eurostat/documents/3217494/7827738/KS-EI-16-001-EN-N.pdf/bbb5af7e-2b21-45d6-8358-9e130c8668ab>.

Key figures on Europe. STATISTICS ILLUSTRATED 2018 edition. – Web ISBN 978-92-79-63348-5, ISSN 2315-201Xdoi: 10.2785/81608, N° Cat: KS-EI-16-001-EN-N, online la <https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-EI-18-001>.