

EVOLUTION OF AGRARIAN STRUCTURES IN ROMANIA

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Abstract

The main indicators used in the analysis refer to: Utilized Agricultural Area (UAA), labour force in agriculture, animal herds, physical and economic farm size. In the period 2005-2013, the number of small-sized farms significantly decreased in Romania, while the number of medium and large-sized farms increased. The Utilized Agricultural Area distribution reveals that the bipolar structure of agriculture has been maintained. Although this distribution indicates a weak presence of medium-sized agrarian structures, there is a consolidation tendency of these structures. While the livestock production activity on the small-sized farms considerably decreased, the livestock herds doubled on the large-sized farms. However, this increase was not enough, so that overall one quarter of total herds was lost. The exit from the farming activity had a higher intensity on the mixed farms. Only a few types of activity entailed labour force increase.

Key words: *agricultural holdings*

JEL Classification: Q12

INTRODUCTION

There are more than 570 million agricultural holdings in the world, and most of them are small or very small-sized. The distribution of the latter reveals that 72% of the agricultural holdings worldwide have less than 1 hectare and utilize only 8 % of the agricultural land; the holdings in the category 1 – 2 hectares account for 12 % of total holdings and control 4% of land, while the agricultural holdings in the category 2 – 5 hectares account for 10 % of total farms and utilize 7 % of the agricultural land. Only 1 % of total agricultural holdings are larger than 50 hectares but these use 65 % of the agricultural land of the world (FAO, 2014).

The distribution patterns of agricultural holdings by size worldwide indicate the prevalence of very large-sized holdings in the countries with high and medium incomes and in the countries where large-scale grazing of animals prevails in the agricultural system (Sarah K. Lowder, 2014). The studies at European level on the structure of agricultural holdings in the year 2013 reveal that there were 10.8 million farms in EU-28 operating 174.4 million hectares (Utilized Agricultural Area – UAA), and one third of these (33.5% or 3.6 million) are located in Romania (Eurostat, 2015). The average farm size in EU-28 was 16.1 hectares, while in Romania it is four times lower (3.6 hectares). These average values must be considered in the context of strong contrasts in the structure of agriculture: in the entire EU, on one hand, there was a great number (4.9 million – almost half of all farms) of very small-sized farms (less than 2 hectares in size) that operated a small percentage (2.5%) of the total area of land utilized for agriculture in 2013 and on the other hand, a small number (0.3 million corresponding to 3.1% of total farms) of very large-sized farms (over 100 hectares), which operated half (50.1%) of the utilized agricultural area in EU-28.

The Common Agricultural Policy values focus on multifunctional agriculture (basic commodity delivery, environmental services, landscape and cultural heritage facilities). In the European Union, the agricultural policies encouraged the family farming pattern as well as the increase of farm size.

Almost half of the Utilized Agricultural Area of EU-28 is owned by four member states (France (15.9% of total EU-28), Spain (13.4%), United Kingdom (9.8%) and Germany (9.6%). Romania ranks 6th, with 7.5%, after Poland (8.3%).

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Structural development in agriculture is frequently described as a change in the number and size of farms. The final result of the structural change, already noticeable at the horizon in the rich countries, is an economy and society in which agriculture is an economic activity that is not different from other sectors, at least as regards labour and capital productivity (Timmer, 2007). In most EU member states, there is a general decreasing tendency of the number of farms and labour force, but the great diversity of farms and their evolution are determined by different socio-economic contexts.

Although Romania's joining the European Union has created new conditions for the development of rural areas and agriculture, the context in which these evolved has been entirely unfavourable from the perspective of the main production factors: agricultural land organization (excessive agricultural land fragmentation), economic power (deficient capitalization) and managerial ability. Under the background of destructured agricultural markets, the agricultural holdings were confronted with new challenges, determined by the free movement of commodities as well as by the adoption of the European agricultural support model. Having in view these factors constraining economic performance, at present, for our country's agriculture, an important objective is solving up the productivity problem, as the increase of productivity in agriculture is most often linked to competitiveness.

MATERIAL AND METHOD

For the analysis of farm structure evolution, certain physical indicators are used, namely: number of farms, Utilized Agricultural Area, labour force on farm. The limitative factor of these physical size indicators resides in their dependence on the type of agricultural activity, and the economic situation of the farm is not known. In this context, the economic efficiency of production factors utilization is analysed on the basis of the level and evolution of labour and land.

The changes in the analyzed period are highlighted by the percentage variation of the utilized indicators, both per total farms and by the legal status of farm.

The data sources on the *farm structure* are represented by the basic surveys, i.e. the General Agricultural Census (GAC), conducted every 10 years and the intermediate structural surveys (ISS), as sample surveys, three times between the basic surveys. The data are presented by size classes, depending on different indicators, namely: Utilized Agricultural Area (UAA), total Standard Output of farm, expressed in euro, legal status of farm, type of farm, etc.

RESULTS AND DISCUSSIONS

In the year 2013, more than 3629 thousand agricultural holdings operated in Romania, with a total Utilized Agricultural Area (UAA) of 13055 thousand hectares.

Similarly to the European context, the evolution of the number of farms in Romania has followed a decreasing trend, so that in the year 2013, the number of farms that operated in agriculture was down by 15% compared to the year 2005. In real terms, more than 636 thousand farms without legal status ceased their activity and 9.6 thousand farms with legal status were set up.

From the size perspective, farms up to 20 hectares exited the farming activity, and out of these more than half belong to the size class 2 – 4.9 hectares. At the same time, under the background of their disappearance, an increase in the number of farms larger than 20 hectares was noticed, out of which 55% are farms ranging from 20 to 99.9 hectares, and 45% have more than 100 hectares.

Table 1. Evolution of the number of holdings by legal status and UAA size classes, 2013/2005

	Total farms, out of which:		Without legal status		With legal status	
	Number	%	Number	%	Number	%
Total	-626490	-15%	-636110	-15%	9620	53%

0 ha	-69020	-51%	-69030	-51%	10	2%
<2 ha	-131790	-5%	-134770	-5%	2980	98%
2-4.9	-322850	-32%	-323680	-32%	830	36%
5-9.9	-95710	-33%	-95910	-33%	200	8%
10-19.9	-16260	-25%	-17000	-26%	750	54%
20-29.9	130	1%	-410	-4%	540	142%
30-49.9	2480	41%	1810	33%	670	143%
50-99.9	2360	48%	1450	37%	920	93%
>100	4150	46%	1430	64%	2720	41%

Source: calculations based on Eurostat data [ef_kvaareg]

The Utilized Agricultural Area (UAA) decreased on the farms without legal status over time, by 1831 thousand hectares. The farms with legal status absorbed a large part of this area, yet overall UAA decreased by more than 850 thousand hectares, the decrease increasing in intensity in the period after the accession to the EU 2007-2010. In percentage terms, UAA decreased by over 6%.

The UAA diminution phenomenon is present on the farms up to 19.9 hectares, being mainly noticeable in the size category 2-4.9 hectares, where the UAA decrease totals more than 1 million hectares. This decrease was compensated by an almost similar increase of areas in the category of farms over 100 hectares.

Table 2. Evolution of Utilized Agricultural Area by legal status of farms and UAA size classes, 2013/2005

	Total farms, out of which:		Without legal status		With legal status	
	Hectares	%	Hectares	%	Hectares	%
Total	-850850	-6%	-1831010	-20%	980160	20%
0 ha	0	0%	0	0%	0	0%
<2 ha	-357020	-18%	-359220	-19%	2200	108%
2-4.9	-1019490	-32%	-1022330	-32%	2840	38%
5-9.9	-631210	-33%	-633670	-33%	2460	15%
10-19.9	-195690	-23%	-207600	-25%	11900	69%
20-29.9	4740	2%	-8600	-4%	13340	145%
30-49.9	99390	44%	72710	35%	26680	146%
50-99.9	173520	52%	104510	40%	69010	97%
>100	1074900	21%	223180	40%	851720	18%

Source: calculations based on Eurostat data [ef_kvaareg]

The Utilized Agricultural Area distribution reveals the continuation of the bipolar structure in the farming sector: the farms up to 10 hectare operate 43% of total UAA, while the farms larger than 100 hectares operate 48%. Although this distribution reveals a weak presence of medium-sized agrarian structures, a farm consolidation tendency exists, as the largest UAA increase took place in the case of farms from the category 50-99.9 hectares (52%) and of farms in the size class 30-49.9 hectares (44%).

In the year 2005, more than 3453 thousand farms representing 81% of total farms were involved in livestock raising activities, while in the year 2013 livestock raising was practiced on 2727 thousand farms, i.e. on 75% of total farms. Although the sheep, goat and poultry numbers increased, due to the diminution of cattle and pig herds, overall, the number of animals was down by one quarter; in absolute figures, this loss represents more than 1627 thousand LU.

Livestock raising became non-attractive in time on the farms up to 20 hectares, yet a positive evolution was noticed for the medium and large-sized farms. In percentage terms, on the large-sized agricultural units the number of animals has doubled.

Table 3. Evolution of livestock herds by legal status of farms and UAA size classes, 2013/2005

	Total farms, out of which:		Without legal status		With legal status	
	LU	%	LU	%	LU	%
Total	-1627440	-25%	-1883130	-31%	255680	41%
0 ha	-12250	0%	-23210	0%	10950	0%
<2 ha	-816200	-35%	-806280	-35%	-9920	-33%
2-4.9	-909890	-44%	-918630	-45%	8730	99%
5-9.9	-294170	-32%	-290870	-32%	-3300	-18%
10-19.9	-6240	-2%	-8310	-3%	2070	6%
20-29.9	21990	23%	32550	40%	-10570	-69%
30-49.9	52650	69%	49480	73%	3170	36%
50-99.9	82580	81%	48120	73%	34460	96%
>100	254110	105%	34000	47%	220100	131%

Source: calculations based on Eurostat data [ef_kvaareg]

The ceasing of farming activities on 15% of agricultural holdings has been also materialized into the diminution of the number of agricultural workers by almost 23%. From the full-time employment perspective, the labour input was down by more than 40% representing the exit from farming of more than 1042 thousand Annual Work Units (AWU). The withdrawal from the farming activity was manifest on the farms without legal status, with a higher frequency on the farms in the size class 0-19.9 hectares. In absolute terms, the highest decrease took place on the small-sized units, while on the medium and large-sized farms the number of persons and farm work (AWU) slightly increased.

Table 4. Evolution of labour force by the legal status of farms and UAA size classes, 2013/2005

	Total farms, out of which:		Without legal status		With legal status	
	AWU	%	AWU	%	AWU	%
Total	-1042960	-40%	-1046020	-42%	3060	4%
0 ha	-17920	0%	-16550	0%	-1370	0%
<2 ha	-439080	-36%	-439160	-36%	70	3%
2-4.9	-424940	-50%	-424600	-50%	-330	-17%
5-9.9	-142170	-47%	-142190	-48%	20	1%
10-19.9	-25080	-32%	-25470	-33%	400	16%
20-29.9	-1210	-8%	-1650	-12%	430	36%
30-49.9	1820	15%	1300	13%	510	25%
50-99.9	2400	20%	1460	20%	930	19%
>100	3230	5%	840	12%	2380	4%

Source: calculations based on Eurostat data [ef_kvaareg]

The exit from farming was manifested with a higher intensity on the mixed farms (with mixed crop – livestock production). Only a few types of activities attracted the increase of labour force, namely vine growing, fruit growing and other types of horticultural activities, as well as in cattle, sheep and goat raising and fattening.

In the year 2013, the Standard Output (SO) reached 11989578 thousand euro. Compared to 2005, this was a positive evolution (+14%), under the background of significant growth on the farms with legal status, as well as on the medium and large-sized farms without legal status.

While at the beginning of the investigated period 82% of the Standard Output was obtained on the farms without legal status, in time the share of these farms in SO was down to 70% on the basis of gradual increase of the output value on the farms with legal status (from 18% to 30%).

In the period 2005 – 2013 the agricultural output value increased by 14%, under the background of significant increase on the farms with legal status as well as on the medium and large-sized farms without legal status.

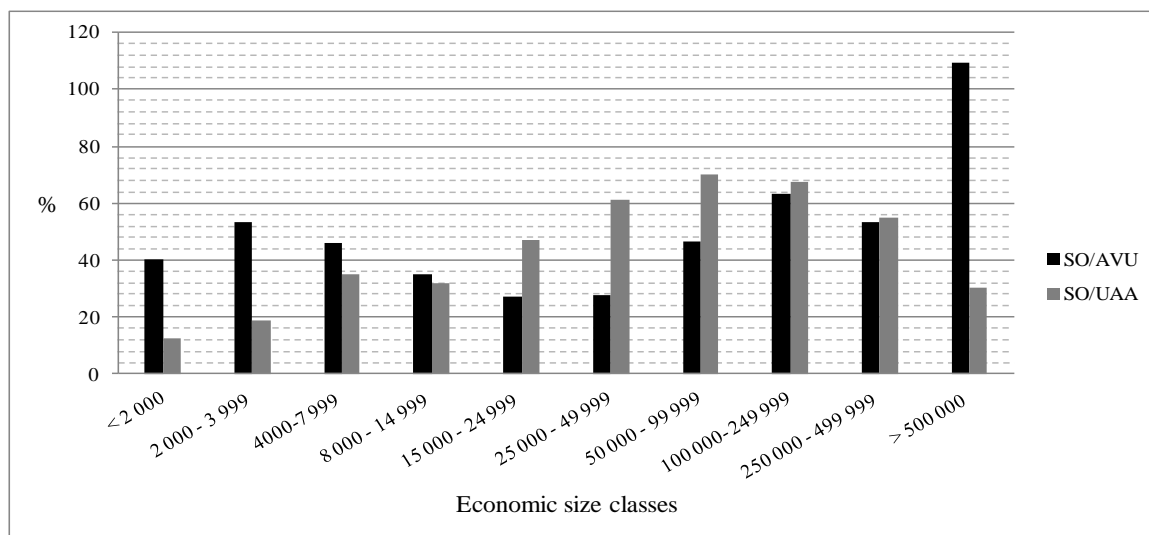
Table 5. Standard Output evolution by total farms and by legal status of farms and UAA size classes, 2013/2005

	Total farms, out of which:		Without legal status		With legal status	
	SO - euro	%	SO - euro	%	SO - euro	%
Total	1471659110	14.0%	-173857600	-2%	1645516710	86.9%
0 ha	180966230	0%	4222260	0%	176743970	0%
<2 ha	42241310	1%	36798300	1%	5443010	21%
2-4.9	-548904150	-18%	-566981690	-19%	18077540	182%
5-9.9	-173129840	-12%	-177140230	-12%	4010390	18%
10-19.9	73414860	13%	44911220	9%	28503650	76%
20-29.9	64809850	42%	62924230	47%	1885620	11%
30-49.9	121258760	87%	104985640	93%	16273120	62%
50-99.9	194855030	102%	110802570	86%	84052470	135%
>100	1516147050	86%	205620110	87%	1310526950	86%

Source: calculations based on Eurostat data [ef_kvaareg]

In the context of these structural changes, an increase of the load on the Annual Work Unit took place, both as regards UAA (+57%) and the livestock herds (+26%). This resulted in labour productivity increase from 4052 euro/AWU in 2005 to 7722 euro/AWU in 2013, representing a 91% increase. As regards UAA productivity, this increased by only 21%.

Figure 1. UAA and AWU productivity evolution in the year 2013 as compared to 2005, %



Source: calculations based on Eurostat data [ef_kvaareg]

Although these indicators represent a partial measure of productivity, they reveal a general trend, mainly from the perspective of the analysis by economic size classes. Figure 1 illustrates a more significant labour productivity growth on the large farms, as well as on the subsistence and semi-subsistence farms. Land productivity also positively evolved, with more significant increases on the commercial farms, mainly in the economic size class 50000 – 99999, in which it increased by 70%.

CONCLUSIONS

The farming structure in the European Union member states depends on several factors, with a mutual interaction between the structural change in agriculture and the socio-economic aspects.

In the period 2005-2013, in Romania, the number of small-sized farms significantly decreased, while the number of medium and large-sized farms increased. These modifications were accompanied by UAA diminution by more than 1 million hectares on the small-sized farms, compensated by an almost similar increase on the farms with more than 100 hectares in size. Unlike the general tendency in the EU, UAA decreased by 6% in Romania, mainly in the post-accession period.

The exit from the farming activity was more intense on the mixed farms (crop-livestock production mix). Only a few types of activity attracted labour force increase, namely vine growing, fruit growing and other types of horticultural activities, as well as in cattle, sheep and goat raising and fattening.

At present, for our country's agriculture, an important objective is solving up the productivity problem. In this context, the medium-sized farm consolidation represents a blending of the need to increase productivity in agriculture with the respect for the CAP values.

In reaching this productivity increase objective, there are major constraints that impact the development of the farming activity:

- 1) Deficiencies in farm management
- 2) Land fragmentation and unreliability of transactions on the land market
- 3) Deficient technologies and climate changes that will impact the availability of basic natural resources (water, soil).

Education is the main pillar of human development and an important factor in agriculture development. A farmer with four years of basic training and education is on the average by 8.7 % more productive than an uneducated farmer (FAO, 2002). Solving up these problems presupposes the increase of the attractiveness level for setting up young farmers. A young farmer is well-connected to the technological and innovative realities, as essential elements for putting into value the resources (land, operating capital), existence of a strong agricultural consultancy service based on farmers' training (initial and vocational training), extension services for performant technologies and delivery of marketing support information.

At the same time, solving up the problems in the field of agricultural cadastre and those in the irrigation system are important levers for the development of agriculture and rural areas with a positive impact in speeding up farm consolidation.

The importance of medium-sized farm consolidation derives from their comparative advantage in the delivery of differentiated, unique products on the increasingly uniformized agri-food markets. The medium-sized farms operate in the space between the vertically integrated commodity markets and the direct markets and have the advantage that they can sell their production directly to consumers on the short food chains, providing reasonable income sources for farmers and a high level of employment.

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