

Increasing the Performance of Agricultural Holdings in Romania - an Imperative for their Management

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Abstract

As a member state of the European Union, Romania consolidates from year to year its position in the agricultural business performance area, especially due to the increase in the share of agricultural land for organic farming.

Romania's long-term development strategy necessarily involves increasing the economic performance of Romanian agriculture alongside the increase in the living standards of the rural population.

This research starts from a current radiography of Romanian agriculture and aims at new ways to increase the performances of the Romanian agricultural farms in the conditions of general economic development.

An adequate management of the Romanian agricultural farms is imperative, along with the effective support of the European Union offered to the Romanian agriculture.

The increase in the incomes obtained from Romania's agriculture can be achieved by a new approach to the size and economic size of agricultural farms, but also by transforming them into organic farms.

Sustainable development of agricultural businesses is thus a priority.

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1. Introduction

The Romanian agricultural competitiveness is a debate full topic in the context of the late sectorial reforms during the country accession and convergence to the EU-28 agricultural model. In this context, agro-food trade competitiveness as a vital component of a total economic competitiveness requires a more thorough approach in the process of land use valuing potential. Understanding the agricultural competitiveness improves the inland agricultural structure development (Popescu et al., 2017).

In Romania, agriculture is the turning point for any medium and long-term development strategy of the national economy, the orientation of Romanian or foreign investors to this field being able to stimulate the appropriate development

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of the industries that feed the agriculture with various raw materials and utilities of the food industry, all of which contribute to the food security of the country and to the obtaining of important amounts from the export sales of the surplus.

Economic growth involves some models of changing the economic structure in several sectors; these models have been a good foundation of the development economy for decades. Two variables are those that receive a special emphasis in the literature of structural transformation: the share of gross domestic product (GDP as a measure of aggregate income) and of the economically active population (as a measure of its work) both measures tend to decrease with GDP growth (Tomich et al., 2019).

In Romania, the limited financing possibilities of the agricultural producers have led to an increase in the importance of European funds for agriculture (Istudor et al., 2015).

Agriculture uses resources provided by the industry, and any imbalance in this industry is entirely felt by it. The globalization of agricultural markets poses obvious difficulties for agricultural businesses, as the probability of production is added to the likelihood of the sale.

The peculiarities that fundamentally distinguish agricultural activity from industrial or purely commercial activity must be considered with all responsibility by the main decision-makers in this field of activity (the ministry, government agencies), especially because any unrealistic decision will affect seriously the food security of this country, and in the end all activities will suffer, including industrial activities.

2. The situation of Romanian agriculture in 2016

In Romania the number of farms by utilised agricultural area are shown in the following table:

Table 1. Agricultural holdings in Romania, by number, by utilised agricultural area, 2013-2016

Indicators	M.U.	Total agricultural holding		2016/2013
		2013	2016	%
Number of agricultural holdings	thou	3630	3422	94.27%
Utilised agricultural area	thou ha	13056	12503	95.76%
arable land	thou ha	8198	7814	95.32%
pastures and meadows	thou ha	4398	4246	96.54%
permanent crops	thou ha	302	301	99.67%
kitchen gardens	thou ha	158	142	89.87%
Average utilised agricultural area per agricultural holding	ha	3.6	3.65	101.39%

Source: Structural Survey in Agriculture INSSE

The number of agricultural holdings decreased in 2016 compared to 2013 by 5.7% and the agricultural area used for agricultural holdings was 4.2% lower in 2016 compared to 2013.

In the structure, the largest decrease in the agricultural area used was in the kitchen gardens, respectively 10.1% lower in 2016 compared to 2013.

As a share of total EU-28, the used agricultural area was 7.2% in 2016, while the number of agricultural holdings accounted for 32.7% of the EU-28 total.

The personnel employed in agriculture was 1.960.300 in 2016.

Young farmers (under 40 years old) represented 7.4% share of all farm managers, in 2016.

Female farmers represented 33.6% share of all farm manager, in 2016.

Farmers with full agricultural training represented 0.4% share of all farm managers, in 2016.

In Romania agricultural holding, by size classes of utilised agricultural area, by destination of agricultural are shown in the following table:

Table 2. Agricultural holdings in Romania, by size classes of utilised agricultural area, by destination of agricultural production, 2016

Size classes of utilised agricultural area	Destination of agricultural production	
	For own consumption, more than 50% ^{*)}	Direct sale, more than 50%
	Utilised agricultural area (hectares)	
Size classes of utilised agricultural area (hectares)		
Under 0.1	17417.43	545.21
0,1 - 0,3	92270.68	4765.40
0,3 - 0,5	105445.66	6137.44
0,5 - 1	372427.47	24998.15
1 - 2	797964.33	75622.66
2 - 5	1652845.71	307654.78
5 - 10	816376.20	370268.06
10 - 20	191587.75	288228.21
20 - 30	26734.11	144326.21
30 - 50	12866.88	172651.28
50 - 100	6646.54	226941.93
100 and over	1005.50	1692671.75
TOTAL	4093588.26	3314811.08

^{*)} Data refers only to agricultural holdings without legal personality.

Source: Farm structure survey 2016 INSSE

The number of very small agricultural holdings, which have used a farm surface up to 1 hectare decreased in 2016 compared to 2013 by 173 thousand agricultural holdings, respectively with 8.9%.

More than 61% of the agricultural area used is owned by those using it.

In Romania agricultural output (constant prices) are shown in the following table:

Table 3. Agricultural output in Romania, 2015 - 2016

Output components (constant prices)	2015	2016	2015	2016	Change
	Million EUR		% of total	% of total	% of total
1. Cereals:	2981	3068	23.99%	24.92%	0.93%
Wheat and spelt	1195	1059	9.62%	8.60%	-1.01%
Rye and meslin	4	3	0.03%	0.02%	-0.01%
Barley	284	287	2.29%	2.33%	0.05%
Oats and summer cereal mixtures	63	65	0.51%	0.53%	0.02%
Grain maize	1395	1614	11.23%	13.11%	1.89%
Rice	10	9	0.08%	0.07%	-0.01%
Other cereals	31	31	0.25%	0.25%	0.00%
2. Industrial crops:	1001	1191	8.06%	9.68%	1.62%
Oil seeds and oleaginous fruits	895	1085	7.20%	8.81%	1.61%
Protein crops	30	42	0.24%	0.34%	0.10%
Raw tobacco	1	2	0.01%	0.02%	0.01%
Sugar beet	34	26	0.27%	0.21%	-0.06%
Other industrial crops	41	37	0.33%	0.30%	-0.03%
Forage plants	1147	1108	9.23%	9.00%	-0.23%
Vegetables and horticultural products	1911	1768	15.38%	14.36%	-1.02%
Potatoes	632	720	5.09%	5.85%	0.76%
Fruits	911	876	7.33%	7.12%	-0.21%
Wine	213	199	1.71%	1.62%	-0.10%
Olive oil	0	0	0.00%	0.00%	0.00%
Other crop products	16	16	0.13%	0.13%	0.00%
Crop output (1+2)	8812	8946	70.92%	72.68%	1.76%
3. Animals:	1704	1608	13.71%	13.06%	-0.65%
Cattle	298	292	2.40%	2.37%	-0.03%
Pigs	747	705	6.01%	5.73%	-0.28%
Equines	17	14	0.14%	0.11%	-0.02%
Sheep and goats	193	170	1.55%	1.38%	-0.17%
Poultry	450	426	3.62%	3.46%	-0.16%
Other animals	1	0	0.01%	0.00%	-0.01%
4. Animal products:	1910	1755	15.37%	14.26%	-1.11%
Milk	941	887	7.57%	7.21%	-0.37%
Eggs	660	597	5.31%	4.85%	-0.46%
Other animal products	309	272	2.49%	2.21%	-0.28%
Animal output (3+4)	3614	3363	29.08%	27.32%	-1.76%

Output components (constant prices)	2015	2016	2015	2016	Change
	Million EUR		% of total	% of total	% of total
Agricultural goods output	12426	12309	100.00%	100.00%	

Source: Eurostat, Economic Accounts for Agriculture (values at real producer prices).

Regarding the dynamics of the structure of agricultural production expressed in constant prices, in the period 2015-2016, we find the following:

- the share of vegetable production in total agricultural production increases from 70.92% to 72.68% by 1.76%
- the share of animal production in total agricultural production decreases from 29.08% to 27.32% by 1.76%
- animal products decline as a share in total agricultural production from 15.37% to 14.26% by 1.11%.

In Romania agricultural income (constant prices) are shown in the following table:

Table 4. Agricultural income in Romania, 2015 - 2016

Values at basic prices	2015	2016	2016/2015
	Million EUR		% Change
Output of the agricultural "industry":	13902	13741	-1.2%
Crop output	8811	8947	1.5%
Animal output:	3614	3363	-6.9%
Animals	1704	1608	-5.6%
Animal products	1910	1755	-8.1%
Agricultural services	174	178	2.3%
Secondary activities	1303	1252	-3.9%
- Intermediate consumption	8058	7921	-1.7%
= Gross value added at basic prices	5844	5820	-0.4%
- Consumption of fixed capital	2202	2060	-6.4%
- Taxes	20	20	0.0%
+ Subsidies	1417	2338	65.0%
= Factor income	5040	6079	20.6%
Agricultural income* (2010=100)	121.6	119.1	-2.1%

Source: Eurostat, Economic Accounts for Agriculture (values at real prices; constant prices for Indicator A), (*) The so-called indicator A is the real net value added at factor cost of agriculture per annual work unit (AWU). The net value added at factor cost (factor income) is calculated by subtracting the consumption of fixed capital from gross value added at basic prices and adding the value of subsidies less taxes.

Income in agriculture declines by 20.1% in 2016 compared to 2015 due to the 1.2% decrease in agricultural production.

The reduction of agricultural production in 2016 compared to 2015 is due to the 6.9% decrease in animal production and secondary activities by 3.9%.

In Romania agricultural input are shown in the following table:

Table 5. Agricultural input in Romania, 2015 - 2016

Input components	2015	2016	2016/2015
	Million EUR		% Change
Seeds and planting stock	636	697	9.60%
Energy	1613	1671	3.60%
Fertilisers and soil improvers	535	582	8.70%
Plant protection products	229	271	18.00%
Veterinary expenses	296	250	-15.40%
Feedingstuffs	2270	2208	-2.70%
Maintenance of materials	408	429	5.00%
Maintenance of buildings	100	108	7.90%
Agricultural services	174	178	2.60%
Other goods and services	1768	1499	-15.20%
Total intermediate consumption	8058	7921	-1.70%
Fixed capital consumption	2202	2060	-6.4%

Source: Eurostat, Economic Accounts for Agriculture, values at real basic prices (2010 = 100)

Total intermediate consumption declined by 1.7% in 2016 compared to 2015, mainly due to 15.4% decrease in veterinary expenses and 12.5% to other goods and services.

Instead, spending on fertilizer and soil improvers increased by 18% in 2016 compared to 2015, followed by seed and planting stock with a 9.6% increase in 2016 compared to 2015.

3. The case of organic farms in Romania

Farming in the European Union is undergoing an extensive process of transformation, the criteria for the sustainability of agricultural production and the quality of agricultural products being at the forefront.

Organic farming has potential to increase net returns, reduce the risks of crop failure and reduce environmental impacts. However, these advantages are shown to be site-dependent and organic farming might lead to soil nutrient depletion and decreasing yields, if the livestock density and manure production is insufficient (Vasile et al., 2015).

Maximizing agricultural output and, implicitly, earnings in conventional agricultural farms loses ground against growing organic farming.

Although it has begun as a niche business with luxury agricultural products for high income social categories, organic farming tends to be the norm at EU level.

In fact, the 2008 world economic crisis has been the maturity exam of organic farming, which managed to survive the crisis and even develop during the crisis.

"Sustainable Intensification," which is now widely used to describe the future direction of agriculture and food production, is a way of meeting the challenges of global population growth, food security, resource conservation and climate change. While sustainability is being interpreted by some speculators in connection with increased production, with a more efficient but potentially higher use of inputs and technology, it is necessary and important to take into account environmental protection, including conservation and renewal natural capital and ecosystem services production Lampkin et al., 2015).

The trend at European level is to increase the share of organic farms in all agricultural holdings.

Organic agriculture's role will be determined by whether it can be or become economically competitive with conventional agriculture. This depends on productivity of organic agriculture, demand for its products, and on the extent to which consumer prices reflect costs of externalities associated with both production orientations, including costs of environmental and health externalities (Ponti et al., 2012).

According to Caron (et al., 2014) the transition to ecological intensification in agriculture is an intensive process of knowledge and should not be perceived as the promotion of old traditional practices.

The different conditions of agricultural production worldwide, as well as the development of infrastructure in rich and traditionally agricultural countries, may falter agriculture in poor countries. Integration of agricultural production activities with industrial processing of agricultural products can reduce the effects of seasonality and facilitate access to bank credit.

The performance of organic farms is directly dependent on:

1. natural production conditions

Natural production conditions imply obvious limits to agricultural activities (specialization according to relief, climate, land fertility, hydrographic network).

2. ways of financing and ensuring agricultural production

Consistency and probability of revenue generation do not allow agriculture to exist under industry-related, trade-related or service-related financing conditions.

Excessive interest rates imposed by the banking system, as well as the minimum risks provided by specialized institutions, can cause the bankruptcy of agricultural activities and the massive use of agricultural products.

3. the solvable demand on the agricultural products market

Under ideal conditions to achieve agricultural output (in the quantities and qualities envisaged) the decisive factor in terms of profitability is the solvable demand on the agricultural products market.

In Romania, the number of agricultural holdings with used agricultural area, organic certificate, agricultural area undergoing transformation and organic livestock farming, according to the legal status of agricultural holdings is reflected in the following table:

Table 6. Agricultural holdings with UAA organically certified, UAA under conversion and organic farming livestock, 2016

			<i>number</i>
Legal status of agricultural holdings	Utilised agricultural area organically certified	Utilised agricultural area in conversion	Organic farming livestock
AGRICULTURAL HOLDINGS			
Agricultural holdings without legal personality	2184	1330	41492
Individual agricultural holdings	1564	1031	27734
Authorised natural persons, individual companies, family companies	620	299	13758
Agricultural holdings with legal personality	192	192	7185

Source: Farm structure survey 2016 INSSE

Each country, regardless of the degree of economic and social development, faces problems in the balanced economic development of the territory, determined by a series of objective and subjective factors that determine the uneven development of economic areas (Istudor, 2006).

The average area of agricultural holdings in the European Union in 2013 was 16.1 ha, while the average size of organic farms (organic) was 36.7 ha.

The trend at the European level is to increase the share of organic farms in the entire farm.

Opportunities for eco-efficient intensification are also identified by better integration of farming and livestock breeding on mixed animal-farming farms (Hochman et al., 2013).

A particular feature is that organic farming management is usually young, open to innovation.

Romania has a huge potential for organic farming, yet the number of certified organic farms is quite small.

Regarding the growing demand for organic agricultural products, at the EU level, but also globally, it will lead to a significant increase in the medium and long term of agricultural land suitable for organic farming.

In fact, organic farming products have a very high added value globally, which allows good long-term economic viability of these types of agricultural holdings.

4. Conclusions

The potential of Romanian agriculture is huge given the natural conditions and opportunities offered as a member state of the European Union.

The transition from the socialist economy to a competitive economy has been marked by a multitude of decisions that have created disproportions in terms of the size and economic size of agricultural holdings, especially through excessive crumbling of agricultural land.

Considering that there are several restrictions in choosing an optimal size of agricultural holdings, starting from the need to protect the natural environment to complying with the requirements imposed by crop or animal breeding technologies.

At European Union (EU-28) level, there are major differences between small and very small and large farms, respectively, at Member State level.

In terms of large-scale agricultural exploitations (between 50-100 ha and over 100 ha), France ranks first, while Cyprus last.

The particular case of the number of very small farms registered in Romania is due to the mode of ownership formation on agricultural land after 1989, the excellent fragmentation of agricultural land being obvious.

With Romania's accession to the European Union as a member state, it has resuscitated a very large part of Romanian agriculture, and the expectations of the medium and long-term Romanian economy are very closely related to the capitalization of this existing natural potential.

The structural survey in agriculture 2016 (ASA 2016) revealed changes in the structure of agricultural exploitations in Romania compared to the structural survey in 2013, as well as changes in agricultural inputs and agricultural production.

There is still an important share of very small agricultural holdings, with a self-consumption of over 50%.

If we refer to organic farms, their number is still very small compared to the European Union average, but the growth potential is huge in this area due to the change in customers' perception of bio-products.

The research clearly reflects the weak role of fragmentation of agricultural land in Romania, resulting in a large number of small farms but also with poor financial potential.

Romania needs to find ways to encourage and support the free association of landowners. The financial sustainability of very small Romanian agricultural exploitations is precarious.

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