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## ANALYSIS OF THE WINE-GROWING SECTOR IN ROMANIA IN REGIONAL PROFILE

### ABSTRACT

The paper presents an analysis of the CAP effects in the wine sector in Romania from a regional perspective. The approached issues mainly regard the evolution of the primary production sector (total area, standard output, total grape production, productive potential of vineyards by age structure, impact upon labour force, etc). The structural changes on the specialized vine farms from the period 2007–2016 consist in the increase of the number of farms and decrease of the UAA, associated to the increase of standard output. The evolutions were different by development regions. The West Region had the best economic performance.

**Key words:** viticulture, Common Agricultural Policy.

**JEL Classification:** Q11, Q13.

### 1. INTRODUCTION

Since the introduction of the Common Market Organization (CMO), the wine market has considerably developed. Briefly, this was characterized by a very short initial period of equilibrium, followed by a significant production increase under the background of constant demand, and finally by a continuous decline and a qualitative change in the demand in the 1980s. The reform adopted by the EU in 2008 had the following objectives:

- ✓ The increase of the competitiveness of wine farmers in the EU – consolidation of the European wine reputation and regaining the market share both in the EU and outside the EU.
- ✓ Simplified market management rules, these becoming clearer and more efficient – in order to obtain a better equilibrium between supply and demand.
- ✓ Preserving the best traditions of European viticulture and increase of its social and environmental role in the rural areas.

The reform adopted by the EU in 2013 aims at harmonizing, rationalizing and simplifying the provisions of the CAP adopted during the previous reforms.

## 2. STATE OF KNOWLEDGE

At the level of the EU wine-growing states and profile organizations, there is a constant concern for the elaboration of studies in this field, either on the occasion of the EU enlargement (Aigrain *et al.*, 2017), or for the evaluation of the world market evolution and for informing producers, consumers and other stakeholders, elaborated by the International Vine and Wine Organization.

In general, the profile studies focus on the assessment of the main competitiveness factors on the world vine and wine market, namely: current production capacity, current capacity of the vine plantations and their growth potential, grape varieties, evolution of grape yields and prices. The issues of interest in the wine sector are the following: global competitiveness of the EU wines on the world market and on the most important export markets; EU wine competitiveness as regards the domestic consumption on the case study markets; the context variables influencing the competitive position of the EU wines.

Another field of interest approached in the literature is represented by the analysis of the impact of climate changes upon vines and wine, as the climate factors have a special impact on the physiological and phenological processes. Climate factors are playing an important and decisive role both from the perspective of crop productivity and from the geographical distribution perspective. Unlike other agricultural crops, in the case of vineyards, certain climate factors such as rainfall do not represent a limitative factor. For instance, a case study made for our country, for the vine-growing region Moldavia, shows that the impact of climate changes is significantly different by the simulated scenarios. The simulated increase in temperature should compensate the negative effect caused by the changes in the rainfall pattern. The results also suggest that the wine farmers should benefit from the climate changes, although this will depend on the vineyard location (De Salvo *et al.*, 2015).

Another study made in the vine-growing region from the South-West Oltenia Region of Romania showed that in the 1<sup>st</sup> decade of the 21<sup>st</sup> century, in the vineyards from Oltenia area, grapes reached absolute maturity 10–15 days earlier than in the 1950s and 1960s. At the same time, important changes were produced in the main composition parameters of grapes: sugar content and total acidity, with a global increase of sugar content at absolute maturity (12–20 g/l, in all vine varieties), while total grape acidity, in the same maturity stage, decreased by 0.75–1.8 g/l tartaric acid. The increase of sugar content and the decrease of total acidity have had different effects in the different wines produced in the region. For the red wines, these changes are favourable to quality. For the white grapes, the decrease of acidity has a negative influence upon the balance of white wine taste and is one of the main factors leading to the limitation of cultivation of certain white varieties (Baduca *et al.*, 2012).

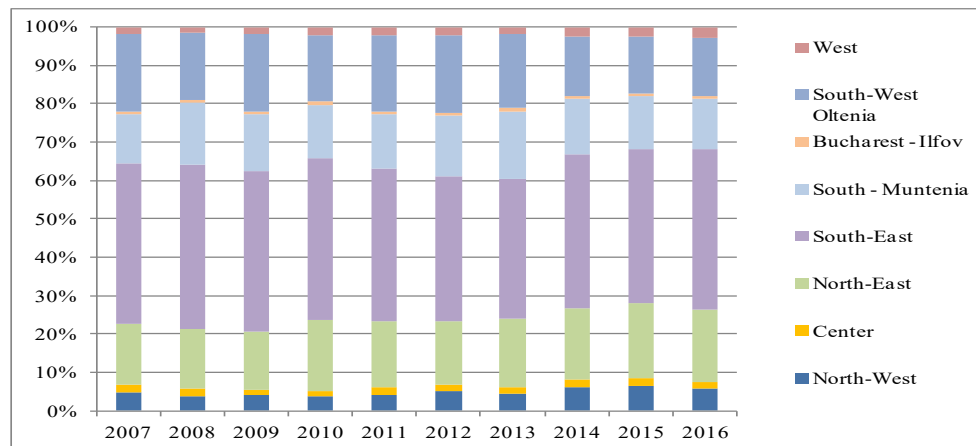
### 3. MATERIAL AND METHOD

The description of the wine and vine sector at regional level first needed an approach to the production systems by their share in the territory. The distribution profiles of viticulture at regional level were outlined following the present capacity of the production structures and volumes at regional level, but also taking into consideration the evolution of indicators over time. The analysis of the production structures by regions was made on the basis of the indicators: number of farms with vineyards, area under vineyards, size of the vine plantation by vine age classes, physical production, standard output, Utilized Agricultural Area, labour force. The analysis of the regional dynamics is based on the identification of the changes related to the investigated period. These are revealed by the percentage variation of indicators. Relevant databases were used from national statistics and Eurostat database.

### 4. RESULTS AND DISCUSSIONS

In the year 2016, wine accounted for 2.2% of the crop production value. By regions, wine contributed to crop production by different shares, from 0.4% in the Region Center to 5% in the South-East Region.

The regional share of wine production value in total wine production is different according to areas, yields and structure of grape varieties. The highest share in value was found in the South-East Region (42.2%), and the lowest in the Region Bucharest-Ilfov (0.7%) (Figure 1).



Source: Eurostat, [agr\_r\_accts]

Figure 1. Share of regional wine production in total wine value

The wine production value increased by 8% in the period 2012–2016 compared to the period 2007–2011. By regions, the increases ranged from 2% in the South-East Region to 40% in the West Region and to 49% in the North-West Region.

Table 1

Wine production value by regions, million euros

GEO/TIME	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2012–2016/ 2007–2011
Romania	253.2	323.6	203.7	140.3	185.1	192.4	306.2	240.3	236.8	224.1	8.5%
North-West	11.9	11.8	8.0	5.1	7.7	10.0	13.5	14.6	15.3	12.6	48.7%
Center	5.2	7.3	2.8	2.3	3.3	3.2	5.6	4.6	4.5	4.1	5.3%
North-East	40.0	50.1	31.4	25.6	32.2	32.0	53.9	45.1	46.5	42.1	22.5%
South-East	106.4	138.2	85.4	59.2	73.5	72.6	112.1	96.4	95.0	94.4	1.7%
South – Muntenia	32.6	52.2	29.8	19.7	26.1	30.0	53.4	34.8	32.8	29.1	12.3%
Bucharest – Ilfov	1.8	2.2	1.6	1.3	1.6	1.8	3.2	1.8	1.7	1.6	18.5%
South-West Oltenia	50.6	57.2	41.1	24.2	36.7	38.9	58.4	37.0	35.0	34.2	–3.0%
West	4.8	4.7	3.7	2.9	4.0	4.0	6.0	6.0	6.1	6.0	39.7%

Source: Eurostat, [agr\_r\_accts]

There are more than 854 thousand farms with vineyards, with a total area under vineyards of 183 thousand hectares.

The average area of vineyards per farm was 0.21 ha. The largest farms are those growing vineyards for wines with Protected Designation of Origin (PDO); these areas belong to 1711 farms, resulting an average area of 12.23 ha (Table 2).

Table 2

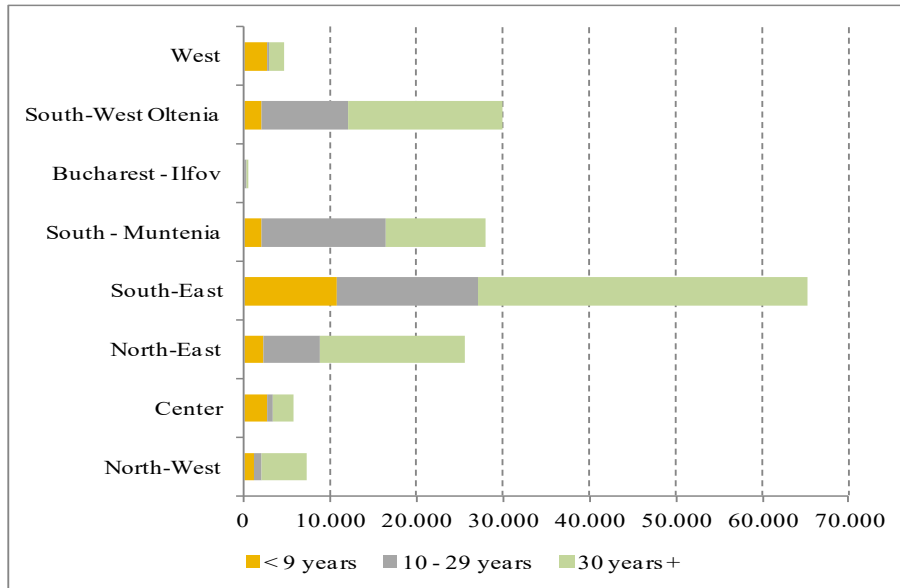
Area and number of farms with vineyards

GEO/TIME	2009		2015		2009	2015
	Hectare	Holding	Hectare	Holding	Ha/holding	Ha/holding
Romania	171,090	894,321	183,717	854,766	0.19	0.21
Vines for wine grapes – total	170,296	891,125	183,533	854,667	0.19	0.21
Vines for grapes for PDO wines	25,694	1,711	32,731	2,677	15.02	12.23
Vines for grapes for PGI wines	:	:	18,237	11,925	:	1.53
Vines for grapes for wines with neither PDO nor PGI	144,602	890,936	132,458	847,777	0.16	0.16
Vines for dual purpose grapes	:	:	106	90	:	1.18
Other vines n.e.c.	794	36	184	165	22.06	1.12

Source: Eurostat, vit\_t2

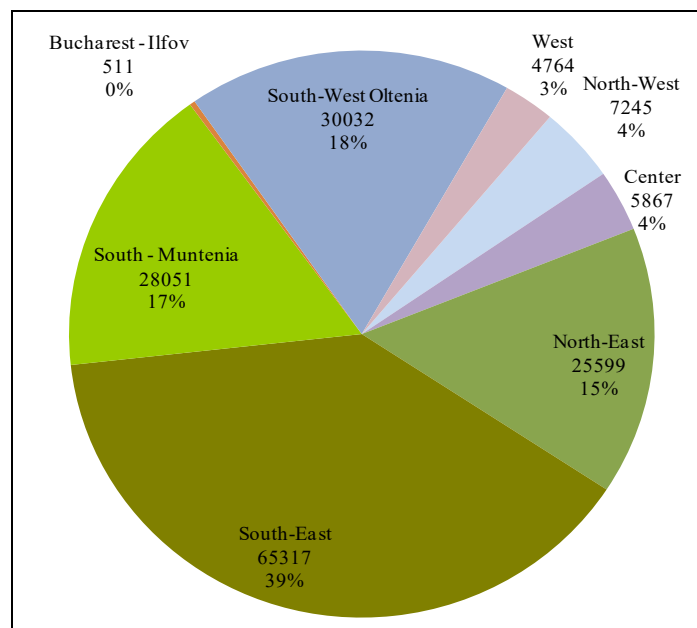
In 2015, the area under vineyards by main grape varieties consisted of 31.7% white varieties (53002 ha), 17.0% red varieties (28381 ha), 1.2% other colours and 50.1% unknown colour varieties.

The largest vine-growing areas are located in the Southern part of the country, (Figure 2 and Figure 3).



Source: Eurostat [vit\_t4]

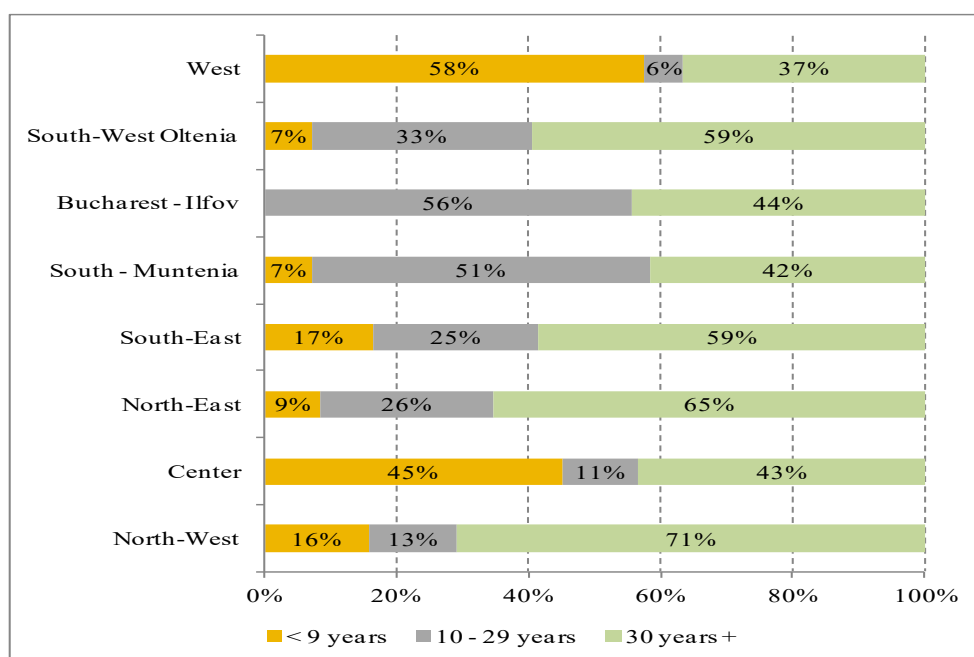
Figure 2. Viticultural area with wine grape varieties by regions and age classes



Source: Eurostat [vit\_t4]

Figure 3. Distribution of vine-growing areas with wine varieties by regions

Across regions, the best age structure is found in the West Region and Center region, where the young plantations of under 9 years old cover 58% of the area and 45% respectively. This structure shows that the investments have made it possible to replace the old plantations (Figure 4).



Source Eurostat [vit\_t4]

Figure 4. Structure of regional vine-growing areas with wine varieties, by age classes

The structural changes produced on the specialized farms in the period 2007–2016 consists in the increase of the number of farms (+73%) and the decline of UAA by 12%. These evolutions had a positive impact upon the labour force (+44%) as well as on the Standard Output (+43%).

By development regions, the evolutions were different. The best economic performance was obtained in the West Region where the average UAA per farm was up from 7.8 hectares in 2007 to 105 hectares in 2016 (Table 3), and the Standard Output related to labour increased by 61% (Table 4).

In the other regions, the Utilized Agricultural Area of wine-growing farms decreased, which reveals a fragmentation of the large-sized farms and/or the clearing of certain areas, either in view of restructuring/reconversion or definitive removing of these areas from farming. Under the background of these structural changes, productivity also decreased.

Table 3

Evolution of utilized agricultural area – hectares/farm

GEO/INDIC_AGR	2007	2010	2013	2016
Romania	1.8	1.0	1.0	0.9
North – West	1.0	1.0	0.6	0.7
Center	<b>6.8</b>	2.0	3.2	2.1
North-East	2.3	1.1	0.9	0.8
South-East	2.3	1.1	1.0	1.1
South-Muntenia	0.8	0.6	0.5	0.5
Bucharest – Ilfov	1.7	0.1	0.1	0.2
South-West Oltenia	1.6	1.2	1.1	0.8
West	7.8	8.4	11.4	10.5

Source: Eurostat [ef\_m\_farmang]

Table 4

Evolution of the Standard Output related to labour, euros/AWU

	2007	2010	2013	2016	+ 2016/2007	
Romania	4307	4101	4226	4348	40	1%
North-West	2494	1756	2133	3715	1221	49%
Center	4657	5291	9252	4769	113	2%
North-East	5309	4405	4493	4491	-818	-15%
South-East	4959	4358	4491	4846	-113	-2%
South – Muntenia	2678	3428	2965	3357	679	25%
Bucharest – Ilfov	2671	595	1123	639	-2032	-76%
South-West Oltenia	2991	3176	3193	2913	-78	-3%
west	14545	12717	12598	23439	8894	61%

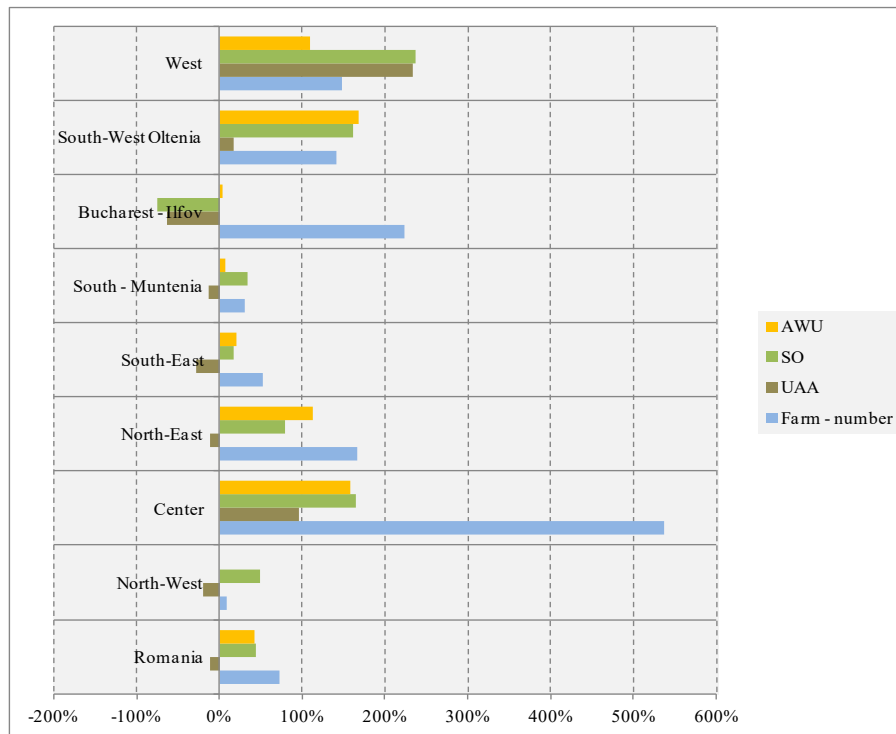
Source: Eurostat [ef\_m\_farmang]

## 5. CONCLUSIONS

At national level, the structural changes produced on the wine-growing farms in the period 2007–2016 consist in the increase of the number of farms and UAA decline, with a positive impact upon labour force and Standard Output.

By development regions, evolutions were different. The best economic performance was obtained in the West Region, where the average UAA per farm increased from 7.8 hectares in 2007 to 10.5 hectares in 2016, while the Standard Output in relation to labour force increased by 61%.

In the other regions, the UAA of wine farms decreased, which reveals the fragmentation of large-sized farms and/or clearing of certain areas, either for restructuring /reconversion or definitive removal from farming. Under the background of these structural changes, productivity also decreased.



Source: Eurostat [ef\_m\_farmang]

Figure 5. Evolution of the main indicators on the farms specialized in viticulture, nation wide and by development regions,  $\pm$  2016/2007

Across regions, the best age structure is found in the West Region and in the Region Center, where the young plantations less than 9 years old covered 58% and 45% respectively of the area. This structure shows that the investments made under the national support program in the vine and wine sector have led to the sustainable development of the sector.

#### REFERENCES

1. Baduca Campeanu, C., Beleniuc, G., Simionescu, V., Panaitescu, L. and Grigorica, L., (2012), *Climate change effects on ripening process and wine composition in Oltenia's vineyards from Romania*, Acta Hort. 931, 47–54 DOI:10.17660/ActaHortic.2012.931.4
2. De Salvo, Maria & Begalli, Diego & Capitello, Roberta & Signorello, Giovanni, (2015), *A spatial micro-econometric approach to estimating climate change impacts on wine firm performance: A case study from Moldavia region, Romania*, Agricultural Systems. 141. 48–57.
3. P. Aigrain, B. Bois, F. Brugière, E. Duchêne, I. Garcia de Cortazar-Atauri, J. Gautier, É. Giraud-Heraud, H. Hannin, N. Ollat, J. M. Touzard, (2017), *From scenarios to pathways: lessons from a foresight study on the French wine industry under climate change*,
4. \*\*\* Eurostat
5. \*\*\* NIS