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OPPORTUNITIES FOR TABLE GRAPES PRODUCTION DEVELOPMENT IN BULGARIA IN THE CONDITIONS OF CAP 2014-2020

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Abstract

The article discussed the state and trends in table grapes production development in Bulgaria during the period 2004-2015. The dynamics in the size of the cultivated area, the level of average yields and production were analyzed. The changes in the specialization and concentration of production were outlined. The trends in consumption, imports and exports of table grapes were presented. The main problems defining the low level of profitability of table grapes production were identified. The opportunities for financial support through the mechanisms of the Common Agricultural Policy 2014-2020 were indicated with a view of the prospects for sustainable development of the sub-sector in the mid-term plan.

Key words: *table grapes, state, trends, opportunities, Common Agricultural Policy*

INTRODUCTION

The high nutritional value of table grapes, as well as its proven healing properties supplementing the prevention of a number of chronic, cardiovascular and oncological diseases [1] [8] [10] had defined its important place among the most produced fruits globally, subject of international trade. Marketing development, improvement of technologies providing timely transportation and storage of products, growing demand, changes in consumer tastes and desire for convenience and diversity were the main factors determining the rapid development of global production and trade of table grapes. According to official data of the International Organization of Vine and Wine (OIV) table grapes production globally had shown a steady tendency of growth, as in 2014 its share in the total quantity of produced grapes had reached 35% compared to 25% in 2000 [7].

The increased volume of global production was primarily due to the rapid growth of the table grapes viticulture in the Asian countries (China, India) and the Southern Hemisphere countries (Chile, Argentina, Peru, Brazil, South Africa, Egypt), whose participation in international trade exacerbated the competition in the sector.

Bulgaria was among the countries losing their market positions globally.

The market share of our country in the international export during 1961-63 was 22.21% immediately after that of Italy (23.94%), while in 2009-2011 it was only 0.03% [9].

Bulgaria had relevant advantage in the production of table grapes due to the suitable soil and climatic conditions, rich varietal diversity, the existing traditions and research potential [2] [3].

Their implementation in the context of the set social and economic objectives - improving the healthy diet of the nation, generating employment and enhancing the vitality of rural areas depended largely on the opportunities for providing financial support to table grapes growers.

The aim of the study was to analyze and evaluate the state, to outline the trends and to identify opportunities for table grapes production development in Bulgaria under the impact of the mechanisms of the Common Agricultural Policy of the European Union.

MATERIALS AND METHODS

The analysis was based on official statistical data from the Ministry of Agriculture and Food (MAF) Agricultural Statistics Department, National Statistical Institute (NSI) and Eurostat. The trends in the changes of the indicators - cultivated areas, average yield, production, import, export, foreign trade balance, consumption were outlined by the methods of comparative and dynamic analysis. The trends in concentration and specialization of production through the indicators number of farms and average size of the area of table grapes in a farm were established.

RESULTS AND DISCUSSIONS

The area of the cultivated table grapes vineyards in 2015 was 2,254 ha, representing 5.8% of the total area of cultivated vineyards in Bulgaria [6].

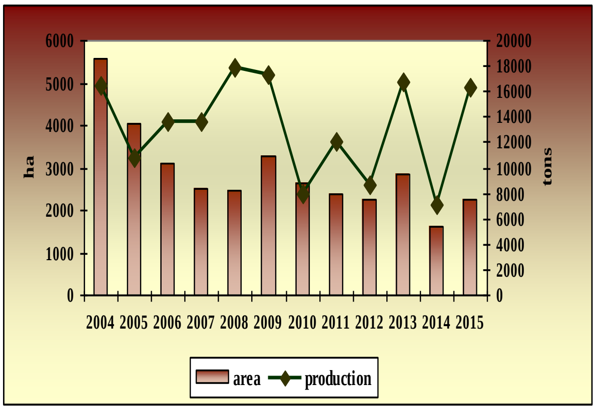

Fig. 1. Dynamics of areas of vineyards and grapes production during the period 2004-2015
Source: MAF, Agricultural Statistics Department

The trend illustrated in Fig. 1 outlined a decline in the size of the cultivated areas by 59.7% in 2015 compared to 2004. The abandonment of plantations of table grapes occurred at a faster pace in the first six years of the analyzed period, when the registered reduction in the size of the vineyards amounted to 35.6% on the average for the period 2007-2009 compared to the average level of the indicator for 2004-2006 (Table 1). From 2007 to 2015 the rates of the negative trend had slowed down as during the last three years of the period the area of the vineyards had decreased by 7.5% compared to the previous three-year period.

Table 1. Areas, production and average yields from vineyards with table grapes varieties

Years	Indicators		
	Area of cultivated vineyards, ha	Produced grapes[1], tons	Average yield, kg/ha
2004	5,591	16,448	2,942
2005	4,062	10,723	2,640
2006	3,096	13,563	4,383
Average (2004-2006)	*4,250*	*13,578*	*3,322*
2007	2,498	13,641	5,460
2008	2,448	17,889	7,305
2009	3,263	17,344	5,315
Average (2007-2009)	*2,736*	*16,291*	*6,027*
2010	2,629	7,989	3,039
2011	2,373	12,080	5,091
2012	2,248	8,659	3,853
Average (2010-12)	*2,417*	*9,576*	*3,994*
2013	2,842	16,770	5,901
2014	1,610	7,079	4,397
2015	2,254	16,320	7,240
Average (2013-15)	*2,235*	*13,389*	*5,846*
2013-15/2004-06 (%)	52.6	98.6	176.0
2007-09/2004-06 (%)	64.4	120.0	181.4
2010-12/2007-09 (%)	88.3	58.8	66.3
2013-15/2010-12 (%)	92.5	139.8	146.4

Source: MAF, Agricultural Statistics Department and own calculations

The average yield of table grapes during the period 2004-2015 was within the range from 2,640 to 7,305 kg/ha. It had been noticed an increase in productivity per unit area of vineyards with table grapes varieties, as the increase amounted to 76.0% according to the average values for the period 2013-2015 compared to 2004-2006 (Table 1). The growth in the level of average yields was due mainly to the elimination of a large part of the area of depreciated, thinned and consequently low-productive table grapes vineyards. Despite the positive trend it should be pointed out that the realized average yields over the analyzed period did not correspond to the biological potential of the table grapes varieties, which was indicative of the worsen agricultural and

[1] Not included grapes from trellis vines

sanitary state of the existing vineyards in the country and not observing the technological requirements for their cultivation. At the constant rate of increase of production costs, the low level of the natural resultant indicator from production activity implied a high prime cost per unit of production and hence lower rate of profitability or even losses, calculated on the basis of the producer price.

The observed negative trend characterizing the development of the areas of table grapes in the country as well as the insufficiently high level of productivity, affected the production of grapes for fresh consumption. The quantity of table grapes produced in 2015 amounted to 16,320 tons, that was almost at the level for the year 2004. The outlined trend of development of that indicator showed that a significant decrease in the produced quantities was observed during the period 2010- 2012, as afterwards the rate of decrease was gradually slowed down (Fig. 1).

The signs of a positive change in the negative rate of development of table grapes production, undoubtedly impacted by the provided after 2007 opportunities for income support to producers in the form of payments per unit of area and national contributions and for subsidizing part of the investment costs for establishment of vineyards with table grapes varieties and purchase of specialized machinery and equipment under the Rural Development Programme (RDP) 2007-2013, were not yet enough so that it could be pointed a reverse in the negative development of the sub-sector. The reasons had been many and complex. Along with the financial difficulties, the most serious argument seemed to be labor shortages resulting from the accelerated pace of depopulation of rural areas, especially in the northern regions of the country. The accelerated emigration processes have led to a deterioration of the age structure of labor resources in agriculture. At the same time, it would hardly be a mistake to point out that the workforce with necessary qualification for the complexity of the technological process in table grapes production was living in countries where the remuneration of labor was much higher, thus helping to maintain competitive advantages of traditional country-producers of table grapes in the EU-28 and suppliers of our domestic market.

The analysis of the distribution of cultivated areas with table grapes per type of specialization of the farms showed that in 2013 the largest share of the area of table grapes was grown in specialized vineyards – 38.5%[2]. That referred to a greater degree of combining wine and table grapes production, as a very small part of farms used all their cultivated area only for table grapes growing [5].

The dynamics of the total number, cultivated area and the average size of farms growing table grapes, grouped according to the size of the utilized agricultural area (UAA) for the period 2003-2013 was presented in Table 2. The number of farms decreased in all groups, as the reduction was the greatest in farms with less than 2 ha UAA - by 84.5%.

The area of grown table grapes in farms decreased in the groups with size less than 2 ha UAA (by 60.8%), from 20 to 30 ha (by 16.7%) and over 100 ha (35.1%). A negative fact was that in large farms having the resources to organize cost effective and competitive production of table grapes the economic interest in this activity had dropped down. In farms with UAA from 2 to 5 ha, 5 to 10 ha; from 10 to 20 ha; from 30 to 50 hectares and from 50 to 100 ha there have been an increase of cultivated areas with table grapes. The positive trend was indicative of the presence of economic incentives having an impact on the entrepreneurial activity in the sector.

The average size of the area of table grapes had increased in almost all groups, except those with an area of 20 to 30 ha and more than 100 ha. The process of production concentration during the six year period was the most intense in farms with UAA from 10 to 20 ha, from 30 to 50 ha and from 5 to 10 ha. It had been observed considerable variation in the average size of table grapes grown per groups of the farms, evidencing for the limited resources of most of table grapes

[2] Own calculations based on data of Eurostat (http://appsso.eurostat.ec.europa.eu)

growers.

Based on these trends it could be concluded that the mechanisms of financial support during the previous programming period of CAP application, mainly as direct payments and under measure 121 “Modernization of Agricultural Holdings”, RDP 2007-2013, had impacted positively the processes of production consolidation, however the effect was minimal. The data on the average farm size unequivocally indicated the orientation of the larger agricultural holdings to extensive production. In farms with UAA from 50 to 100 ha and over 100 ha, the average size of cultivated table grapes decreased in 2013 compared to 2007, indicating the intentions of entrepreneurs aimed at reducing production costs and increasing the income based on crops for which the percentage of direct payments calculated on the basis of direct production costs was significantly higher than for table grapes viticulture.

Table 2.Change in the size of farms growing table grapes during the 2003-2013

Indicators	2003	2007	2013	2007/2003 (%)	2013/2007 (%)	2013/2003 (%)
Farms, number	36,400	14,990	6,940	41.2	46.3	19.1
0 ≤ 2 ha	32,560	12,760	5,040	39.2	39.5	15.5
2 ≤ 5 ha	2,660	1,550	1,090	58.3	70.3	41.0
5 ≤ 10 ha	650	300	350	46.2	116.7	53.8
10 ≤ 20 ha	240	120	170	50.0	141.7	70.8
20 ≤ 30 ha	60	70	50	116.7	71.4	83.3
30 ≤ 50 ha	50	60	80	120.0	133.3	160.0
50 ≤ 100 ha	50	40	60	80.0	150.0	120.0
≥ 100 ha	140	90	100	64.3	111.1	71.4
Area, ha	4,090	3,090	2,960	75.6	95.8	72.4
0 ≤ 2 ha	1,990	940	780	47.2	83.0	39.2
2 ≤ 5 ha	410	670	420	163.4	62.7	102.4
5 ≤ 10 ha	120	130	250	108.3	192.3	208.3
10 ≤ 20 ha	50	50	280	0.0	560.0	560.0
20 ≤ 30 ha	60	20	50	33.3	250.0	83.3
30 ≤ 50 ha	30	150	190	500.0	126.7	633.3
50 ≤ 100 ha	80	250	120	312.5	48.0	150.0
≥ 100 ha	1,340	880	870	65.7	98.9	64.9
Average size, ha	0.11	0.21	0.43	190.0	204.8	390.9
0 ≤ 2 ha	0.06	0.07	0.15	116.7	214.3	250.0
2 ≤ 5 ha	0.15	0.43	0.39	286.7	90.7	260.0
5 ≤ 10 ha	0.18	0.43	0.71	238.9	165.1	394.4
10 ≤ 20 ha	0.21	0.42	1.65	200.0	392.9	785.7
20 ≤ 30 ha	1.0	0.29	1.00	29.0	344.8	0.0
30 ≤ 50 ha	0.6	2.5	2.38	416.7	95.2	396.7
50 ≤ 100 ha	1.6	6.25	2.00	390.6	32.0	125.0
≥ 100 ha	9.57	9.78	8.70	102.2	89.0	90.9

Source: Eurostat (http://appsso.eurostat.ec.europa.eu) and own calculations

The limited quantity of production determined the drop in the level of consumption. Because of the low elasticity of demand, determined by the nature of table grapes - fruit satisfying immediate physiological needs and the lengthy period required for the manifestation of structural changes in consumer demand, the consumption of table grapes per capita had remained relatively stable over the period 2004-2015, varying from 1.6 kg to 3.2 kg (Table 3). Fluctuations were observed per years, depending on the variation in the quantity of production, evidencing for the preferences of the Bulgarian consumers mainly to the taste qualities of the national table grapes. The low incomes and high selling prices of table grapes were the factors limiting grapes consumption in the country. The annual variations in the amount of consumed table grapes per capita corresponded to the variations in the production volumes, indicating potential for growth of consumer demand with increased production.

The constant decline in the table grapes production and the consequent inability to meet the needs of the domestic market necessitated the import of table grapes. The dynamics of development with regard to the physical volume of import had been shown to steadily increase, more pronounced in the period 2012-2015. The quantity of imported table grapes increased by 179.8% in 2015 compared to 2004 and by 26.1% compared to 2014. The value of import had increased by 115.6% for the period from 2004 to 2015. The significant rise in the physical volume of imports observed over the last three years was the result of the decrease in the average level of import price - from USD 0.70 per kilogram of table grapes in 2012 to USD 0.34 per kg in 2015.

Table 3. Consumption, imports, exports and foreign trade balance of trade with table grapes

Years	Consumption		Import			Export			Trade balance, thousand USD
	tons	per capita, kg	tons	thousand USD	Unit price, USD	tons	thousand USD	Unit price, USD	
2004	22,507	2.9	2,893.3	1,259.2	0.44	5.0	6.6	1.31	-1,252.6
2005	12,350	1.6	3,185.9	1,728.4	0.54	4.9	7.9	1.63	-1,720.9
2006	16,894	2.2	2,680.4	1,294.4	0.48	4.4	8.1	1.83	-1,286.3
2007	22,921	3.0	1,626.7	1,240.7	0.76	23.7	45.5	1.92	-1,195.2
2008	23,580	3.1	3,281.3	2,257.2	0.69	519.4	596.8	1.15	-1,660.4
2009	24,204	3.2	3,094.2	1,764.3	0.57	697.9	918.1	1.32	-846.2
2010	15,010	2.0	2,887.9	2,418.9	0.84	949.3	1228.0	1.29	-1,190.9
2011	16,120	2.2	3,953.8	3,553.1	0.90	1,400.5	2215.9	1.58	-1,337.2
2012	16,804	2.3	5,736.8	4,028.1	0.70	965.8	1450.5	1.46	-2,577.6
2013	23,186	3.2	4,942.4	2,497.9	0.51	994.9	1027.0	1.03	-1,470.9
2014	12,964	1.8	6,421.6	3,008.5	0.47	501.9	557.0	1.11	-2,451.5
2015	15,738	2.2	8,095.2	2,714.7	0.34	1,086.1	687.9	0.63	-2,026.8
2015/2004 (%)	69.9	75.9	279.8	215.6	77.3	21722.0	10422.7	48.1	161.8
2015/2007 (%)	68.7	73.3	497.6	218.8	44.7	4582.7	1511.9	32.8	169.6

Source: NSI (http://ftrade.nsi.bg/) and own calculations

While at the beginning of the studied period 2004-2006, exports of table grapes was symbolic within 4.4 to 5 tons, mainly for airplane and ship supply in the years after the country's accession to the EU the exported quantity increased, reaching 1 400.5 tons in 2011. The value of exports also increased under the simultaneous impact of the greater quantities and growth in the average export price - from 1.15 USD/kg in 2008 to 1.58 USD/kg in 2011. Over the past four years, the quantity of exported table grapes remained relatively stable, except in 2014, when the unfavorable weather conditions of the year had a negative impact on the level of the domestic production. Under the influence of the economic situation on the international market, the average price of exports dropped down from 1.46 USD/kg in 2012 to 0.63 USD/kg in 2015. However the export development was much more dynamic compared to the import as the limited quantity of exported products at constantly increasing import was the reason for the negative foreign trade balance of trade with table grapes.

The financial mechanisms to support table grapes producers during the previous programming period of the CAP application in Bulgaria (2007-2013) included:

- support of producers' incomes - direct payments (single area payment scheme and national payments);
- support for building agricultural holdings in the form of a single premium under Measure 112 Setting up of Holdings of Young Farmers under the Rural Development Programme;
- financing part of the investment costs for setting up table grapes vineyards, purchase of agricultural machinery and equipment for the farm, as well as non-financial investment in

the farm - Measure 121 “Modernization of Agricultural Holdings;
- support for restructuring costs of operations, Measure 141 "Support for Semi-Subsistence Farms Undergoing Restructuring".
The allocations under the single area payment scheme did not have a major impact on the profitability of the table grapes production. The sum granted in 2013 amounted to 158.40 EUR/ha covered only 5.5% to 6.8% of the total direct production costs, that was extremely insufficient to ensure the stability of entrepreneurial income and promote the economic interest of the producer [4]. According to data of the State Fund Agriculture - Paying Agency, most approved and paid projects throughout the programming period were registered under Measure 141 (145 projects), for which the grant amounted to 517,192 EUR and represented 15.2% of the total funds allocated for financial support for the sector (3.3 million EUR). Young entrepreneurs started their activities in table grapes production were a total of 46, who received a grant of 0.9 million EUR, while for modernization of production were paid a total of 1.9 million EUR for the implementation of 32 projects. The amount of the subsidy did not cover the needs of the sector related to the expansion of production potential, modernization of production processes and increasing the market orientation of the farms. The small number of approved projects showed that many vine-growers remained without support because of the existing problems of organizational, managerial, administrative and institutional nature, refracted through the prism of the specifics of the investment and the production of table grapes viticulture. The main conclusion derived from the evaluation of the actual effects of the policy during the previous programming period on the development of table grapes viticulture was that to stimulate investment activity in the sector, besides subsidizing investment in setting up of vineyards it should be ensured greater amount of financial support to producers’ income during the fruit-giving period of the plantations.
The new multi-layered model of direct payments applicable in the country for the period 2014-2020 aimed to provide more balanced, transparent and equitable distribution of aid between farmers (Table 4). Maintaining the base single area payment scheme as established and relatively efficient and easy system for support was related to the requirement of minimum cultivated area of 0.5 hectares for all crops and was only granted to farmers complying with the statutory conditions for an active farmer. The most serious impact in terms of stable profitability in table grapes production was the chosen in our country Scheme for direct support coupled to production and in particular the Scheme for coupled support for fruits, including table grapes. The rate of payment determined by MAF for Campaign 2015 was in the amount of 990.88 EUR/ha and the supported areas with table grapes were 895 ha. MAF data for 2016 revealed an increased interest by producers of table grapes, as the filed applications for support covered an area of 1,621 ha (+ 81.0%) while the indicative rate was set at 556.95 EUR/ha.
With a view of the need for stabilizing the production of table grapes in mid-term plan a positive element was the continuing in the new programming period subsidizing the investments for setting up and/or replanting of table grapes vineyards provided for under measure 04 Investments in Physical Assets, sub-measure 4.1. Investments in Agricultural Holdings under the Rural Development Programme 2014-2020. Small farms with a standard production volume between 2,000 and 7,999 Euro (according to criteria established in the Thematic Sub-programme for the development of agricultural holdings in Republic of Bulgaria (2014-2020)) could also apply for support when setting up table grapes vineyards, and for acquiring of agricultural machinery or equipment for grapes storage. Starting aid for young farmers, whose business plan could include activities for setting up, replanting or restoration of plantations with table grapes varieties was granted under measure 6.1. of the new RDP.

Table 4. Opportunities to support table grapes production through mechanisms and measures financed by the CAP 2014-2020

First pillar **Direct payments and market support**	**Second pillar** **Rural Development Programme 2014-2020**
A) Direct Payments Single Area Payment Sheme (SAPS); Green payment (payment per hectare for respecting certain agricultural practices beneficial for the climate and the environment); Redistributive payment for the first 30 ha; ***Coupled support for fruit (including table grapes).***	**M01 Knowledge transfer and information actions** - Sub-measure 1.1. Vocational training and skills acquisition - Sub-measure 1.2. Demonstration activities and information actions - Sub-measure 1.3. Short-term farm and forest management exchanges and farm and forest visits.
	M04 Investments in physical assets - Sub-measure 4.1. Investments in agricultural holdings. - Sub-measure 4.1.2. Investments in agricultural holdings in the Thematic Sub-programme for the development of agricultural holdings - Sub-measure 4.2. Investments in processing/marketing of agricultural products - Sub-measure 4.2.2. Investments in processing/marketing of agricultural products in the Thematic Sub-programme for the development of agricultural holdings.
	M06 Farm and business development - Sub-measure 6.1. Business start-up aid for young farmers. - Sub-measure 6.3. Business start-up aid for the development of small farms.
	M09 Setting up of producer groups and organisations
	M11 Organic farming - Sub-measure 11.1 Payments to convert to organic practices and methods per ha of UAA. - Sub-measure 11.2. Payments for maintain organic practices and methods per ha of UAA.
B) Market measures "Fruit and vegetables" Support for creating operational funds of producer organizations (Pos) or associations of Pos. Support for implementing operational programmes. Recognition of interbranch organisations.	**M16 Cooperation** - Sub-measure 16.1. Support for the establishment and operation of operational groups of the EIP for agricultural productivity and sustainability - Sub-measure 16.2. Support for pilot projects and for the development of new products, practices and technologies. - Sub-measure 16.4. Support for horizontal and vertical co-operation among supply chain actors for the establishment and the development of short supply chains and local markets..

Source: http://www.mzh.government.bg/MZH/bg/ShortLinks/SelskaPolitika/direktniplashtaniq2015-2020/Polezninasoki.aspx, http://www.dfz.bg/bg/prsr-2014-2020/prsr--2014-2020/ and http://www.mzh.government.bg/MZH/bg/ShortLinks/PRSR.aspx

The fact that the provided direct income support for farmers growing table grapes in the new programming period was significantly greater in amount than the subsidies received over the past seven years, in addition to the opportunities for financial support for investment in the setting up of new table grapes vineyards, including by the methods of organic farming, preconditioned much more tangible positive impact on the production potential development in the sub-sector. The set threshold for minimum yield would inevitably impose strict observance of agro-technical measures that would have an effect on the quality of produce with a direct impact on the competitiveness of production.

CONCLUSIONS

The results of the analysis clearly indicated slowing down of the negative trend of development of table grapes production in

Bulgaria, under the influence of the mechanisms of the CAP. However, a number of problems in the sub-sector had remained unresolved – the small size of cultivated areas; shortage of skilled labor force; poor investment activity and renewal of the production potential; low degree of association in the sector and the inability of contracting a high level of market price.

The opportunities for support the table grapes production provided under the EU funds in the 2014-2020 period, as aid schemes are broader than those granted during the previous programming period.

That created expectations for positive development, both in terms of production potential and productivity as a result of the total production, and in terms of the degree of supply and access of the population to quality and inexpensive table grapes.

The implementation of the outlined opportunities shall be directly dependent on the degree of administrative and institutional effectiveness of the sub-sector environment.

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