

Conference Paper

Features of Russian Agribusiness Grape-winery Subcomplex Modernization

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Abstract

The article devotes to the analysis of the Russian agribusiness grape-winery subcomplex current state and to its development features description. The problems of viticulture and winery, that impede the subcomplex development and modernization, are highlighted. These problems are the inability of viticulture farms to satisfy the wineries need for raw materials fully, the high cost of growing grapes, cheap imported wine materials, the lack of competitiveness towards foreign producers, and necessary financial support absence. To develop the wine and wine industry in our country, it is necessary to implement a set of measures at the federal and regional levels. At the federal level, it is necessary to create an appropriate legal framework for high-quality winemaking, which would equally protect the interests of grapes and wine producers, wine trading and consumers. At the regional level, it is relevant to improve the material and technical base state of the viticulture of Russia, because nowadays the industry development does not meet the existing agro technical requirements and lags significantly behind the development of Western countries. Since 2001, the state policy of supporting agricultural production conducted in the last decade and the agro-industrial policy in Russia in general has tended to create a developed wine-growing sub-complex. Over the past few years, when modernizing this subcomplex, vineyards have been renovated, new highly productive varieties have been laid. These measures positively affect the grape production and yield and generally give hope for the grape industry development. Emphasis is placed on key areas, features and prospects for the modernization of the wine and wine subcomplex of Russian agroindustrial complex. This is the implementation of a set of measures at the federal and regional levels. The article describes vectors and stages of the implementation of state policy and financial support in the field of this subcomplex modernization, proposed by the Concept of the Development of Viticulture and Winemaking in the Russian Federation for the period 2016--2020 and the planning period until 2025.

Keywords: agribusiness, grape-winery subcomplex, development concept, financial support, state support of viticulture and wine industry, modernization

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1. Introduction

The grape-winery subcomplex occupies a special place in Russian agrarian economy and is unstable. Essentially, the subcomplex aims to meet the needs for table grapes and wine grapes, wine materials, wines, brandies, juices, etc. However, there are a number of problems hindering the development of the industry. They are: regulatory imperfection; the inability to provide state support to agricultural producers engaged in the production of wine from their own grapes; minor role of science and loss of advanced training system; viticulture farms unable to fully satisfy the wineries demand in raw materials. This is connected to a vineyards area reduction, as well as the high cost of growing grapes; cheap imported wine materials; insufficient level of competitiveness towards foreign producers, etc. Domestic wine products are inferior to their foreign counterparts in terms of value for money principle, which is caused by the impossibility of reducing individual non-production costs in domestic enterprises; the presence of barriers to entry into the industry to small enterprises, etc.

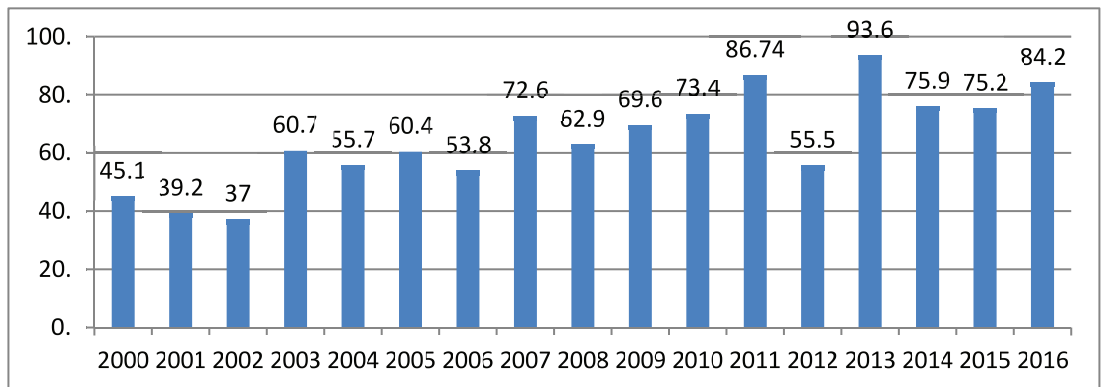


Figure 1: Grape yield dynamics in all farms categories by regions and by the Russian Federation, 2000-2016, centner/ha. (Compiled on the basis of the Departmental Form of Report of the Ministry of Agriculture of Russia. Crop yield (based on the harvested area).

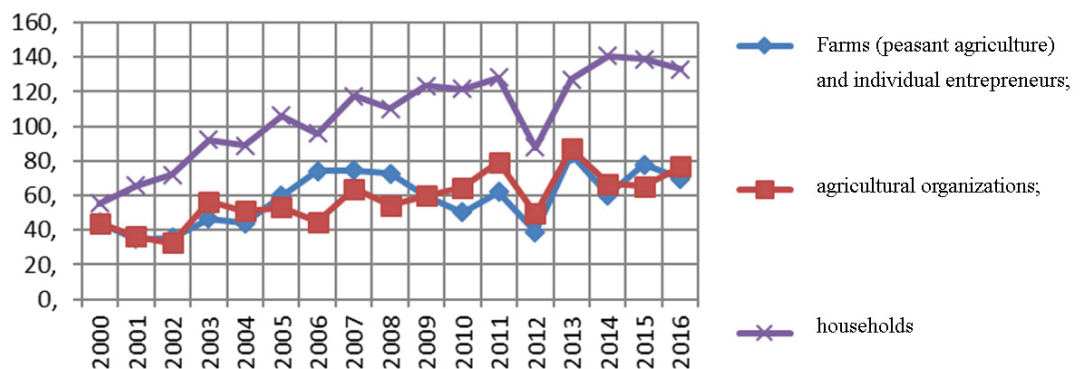


Figure 2: Grape yield dynamics by categories of farms of the Russian Federation, 2000-2016, center / ha (Developed on the basis of the Departmental Report Form of the Ministry of Agriculture of Russia).

TABLE 1: Grape yield dynamics by regions and the Russian Federation, 2000–2016, center / ha. (Grape yield dynamics in the Southern and North Caucasus districts 2000–2015, t/ha [1].

	Krasnodar Krai	Republic of Dagestan	Stavropol region	Rostov region	Russian Federation
2000	62,6	32	63	17,4	47,1
2001	47,1	34,9	22,5	24,5	39,2
2002	41,3	34,0	29,7	18,8	37,0
2003	85,5	47,9	45,5	42,4	64,4
2004	55,8	52,8	93,3	41,9	55,7
2005	68,2	64,3	59	39,8	57,9
2006	58,4	69,5	23,9	17,5	50,8
2007	82,2	77,2	65,2	25,2	72,0
2008	76,5	70,6	50,3	37,0	66,0
2009	84,5	64,0	54,8	36,0	69,5
2010	86,7	74,4	61,7	49,0	70,4
2011	113,4	78,2	68,4	58,1	86,4
2012	75,8	35,9	55,5	51,3	52,7
2013	105	89,1	85,1	53,2	90,0
2014	100,8	90,3	64,8	62,8	75,9
2015	89,7	96,3	54,1	40,6	75,7
2016	130,7	96,6	173	101,2	112

2. Problem Statement

Current viticulture and winery state analysis reveals the existence of a number of systemic challenges constraining sustainable sectoral development. They are: no state support for viticulture and winemaking; insufficient amount of domestic grapes for the wine production; high dependence on the import of raw materials; significant proportion of vine plantations that have been decommissioned, requiring recultivation, as well as the thinness of fruit-bearing vineyards; almost total absence of the arboretum base in viticulture and the lack of domestic grape planting material with restrictions on the import of grape planting material from the European Union.

The sectoral infrastructure underdevelopment is worthy mentioned too. The process of foreign planting material importation into the territory is difficult; breeding work level on the development of existing and the development of new disease-resistant grape varieties is insufficient; there is no centralized logistics system, lack of capacity for storing grapes, high-energy intensity, and vineyards equipment and agricultural machinery and

equipment for viticulture are worn-out morally and technically. Moreover, there is lack of domestic agricultural machinery and equipment production, low labor productivity; no laboratory equipment at most enterprises for phytosanitary monitoring. Drip irrigation networks and water storage facilities for grape plantations are insufficient. National scientific base level does not meet the requirements of the current level of sectoral development in foreign countries. There is no highly qualified professional staff; level of selection work on the development of existing and the development of new stress-resistant grape varieties is insufficient; the institute of wine products with a protected geographical indication and a protected appellation of origin is underdeveloped. The unique domestic wine brands is almost absent, and new brands are virtually unknown both in Russian market and foreign countries, as well as insufficient state attention to the development of wine tourism and gastronomy [2].

3. Research Questions

The peculiarities of the modernization of the grape-winery subcomplex of agribusiness connect with the historical, climatic, regional, resource, financial, personnel conditions.

The domestic viticulture origin is associated with the name of Tsar Mikhail Fedorovich and his order, which in 1613 laid vineyards in Astrakhan.

The continental climate of Russia, characterized by the contrast of the temperature day and night regime, creates fertile conditions for the rapid ripening and quality improvement of the the Russian Federation, with its climatic conditions, has all the prerequisites for the production of high-quality table and wine grape varieties, as well as high-quality wines that are not inferior to European wines.

Today, wine grape occupies the main grape plantations area. The wine grape varieties represent about 85 % of total grape production in Russia, which is about 440 thousand tons per year. However, wine producers needs more, that is why Russian wines are 90 % made of imported wine materials. Today, the main import varieties dominant in plantations are Cabernet, Chardonnay, Merlot, Aligote, etc. These are the main import competitors of domestic varieties. However, Russian grape varieties have certain advantages: they are more resistant to frost, pests and diseases. In addition, the undeniable advantage of Russian seedlings is the price, which is 15–20 % lower than the imported ones. The biggest advantage of the Russian planting material is its great adaptability to agro-ecological conditions.

In addition to viticulture, the subcomplex includes enterprises for the semi-processing of raw materials and enterprises for secondary winemaking, as well as organizations

engaged in the procurement, storage, transportation and trade of final products -- wines and brandies [4].

Today, the fact that domestic agriculture and viticulture do not satisfy the domestic needs for wine and grapes is obvious. Moreover, to development the industry effectively, it is necessary to solve two problems: a funding gap and high quality planting material gap.

When the State and business interests are balanced, viticulture and winery, as a joint sub-complex of the agribusiness, will be develop more efficiently. The goal pursued by the vineyards and winemaking enterprises is to increase the competitiveness of products and maximize profits [5].

4. Purpose of the Study

Thus, the development of the grape-winery industry in our country requires an implementation of the set of measures at the both federal and regional levels. At the federal level, it is necessary to create an appropriate legal framework for high-quality winemaking, which would equally protect the interests of grapes and wine producers, wine trading and consumers. Furthermore, it is necessary to cut division between the federal and regional authorities to support and control the high-quality grapes and wine production. A separate program for the support and development of the grape-winery subcomplex of the agribusiness of Russia, containing the following control over the sequence of its execution and appropriate funding, needs to be established. The grape-winery subcomplex has its own features, because the vineyard is a unified property complex. At the regional level, it is relevant to improve the material and technical base state of the viticulture of Russia, because nowadays the industry development does not meet the existing agro technical requirements and lags significantly behind the development of Western countries. Moreover, the lack of an effective system for training qualified human resources and low wages impede the development of an effective grape-winery subcomplex. That creates a shortage of labor in the industry. These questions solution will allow raising the grape-wineresubcomplex of Russia to a new, highly efficient level of the whole agriculture development.

5. Research Methods

Russian grape-winery subcomplex state analysis reveals that nowadays ratio between Russian vineyards area and the total vineyards area of grape-producing countries is 0.8

%. However, despite the state support, so far there were not any increases in the area of vine plantations, which, in turn, reduces the subcomplex efficiency and does not allow achieving advanced development.

6. Findings

Since 2001, the state policy of supporting agricultural production conducted in the last decade and the agro-industrial policy in Russia in general has tended to create a developed wine-growing sub-complex. There are some peculiarities. Over the past few years, when modernizing this subcomplex, vineyards have been renovated; new highly productive varieties have been laid. These measures positively affect the grape production and yield and generally give hope for the grape industry development.

According to Rosstat, the gross grape harvest in all categories farms in 2016 amounted to 5,517,333 centners. In Russia, more than 500 enterprises engaged in grape production on an industrial scale. The main grape plantings regions are Krasnodar Krai, the Republic of Dagestan, Stavropol Region, Rostov Region and the Republic of Crimea. The main area of grape plantations is technical grapes. The total area of grapes in the Russian Federation in 2015 was 85.1 thousand hectares, and it amounted to 87.6 thousand hectares in 2016.

There were no significant changes in the gross grapes harvest in the regions over the period from 2000 to 2016. Over the past fifteen years, the average value of the total grape harvest in the Krasnodar Territory was 160.85 thousand tons, in the Republic of Dagestan -- 104.05 thousand tons, in the Stavropol Territory and the Rostov Region the average gross collection was 32.89 and 11.44 thousand tons, respectively. In 2006, in the Krasnodar, Stavropol Territories and the Rostov Region, there was a rather strong decline in the total grape harvest, which was mainly caused by severe weather conditions during this period, which resulted in the loss and damage of a part of the vineyards [1].

The main Russian vineyards areas are located in the South and North Caucasus Federal Districts. The share of the Southern District in 2016 is accounts for 53.2 thousand hectares, in the North Caucasus -- 33.3 thousand hectares. The largest share of vine plantations is in the Krasnodar Territory -- 24.8 thousand hectares and the Republic of Dagestan -- 23.3 thousand hectares. The Republic of Crimea, the Stavropol Territory and the Rostov Region account for 18.5 and 6.4 thousand hectares, 4.1 thousand hectares, respectively. Grape yield is one of the indicators determining the effectiveness of the grapes (Figure 1).

As can be seen from Figure 1, the dynamics of grape yields in farms of all categories over the period from 2000 to 2011 had a positive tendency, there was a decrease in yields in 2012, but through the from 2013 to 2016 there was a growth. The introduction of new high-potential and high-yielding varieties with high resistance to pests and diseases, to unfavorable environmental conditions, as well as high-tech means of farming will increase the average vineyards' yield up to 90--100 centners/ha [2].

Analysis of the grape yields dynamics in the context of individual categories of farms shows that the highest yields of grapes are gathered by households engaged in amateur viticulture in home gardens (Figure 2).

The grape yields dynamics in farms (peasant agriculture) and agricultural organizations is approximately at the same level. As can be seen from Figure 2, the maximum yield for the analyzed period in farms (peasant agriculture) and agricultural organizations was gathered in 2013 and amounted to 84.0 and 87.1 c / ha, respectively. Then, the yield growth rates in these categories of farms was reduced to the level of 2009--2010 and constitute 60.2 and 77.9 centner / ha in 2014, 67 and 65.2 centner/ ha in 2015 in farms (peasant agriculture) and agricultural organizations, respectively. Over the analyzed period, the maximum yield obtained in households was in 2014 and amounted to 140.8 centners per hectare, followed by a slight decrease in 2016.

However, consideration must be given to the fact that in agricultural production in general and in the grape-winery subcomplex in particular, the level of yield is greatly influenced by favorable or unfavorable weather conditions. In this regard, the yield in certain years may change in a positive or negative direction (Table 01).

In recent years, the total vineyards area was hardly changed and reminded at an average of 68.5 thousand hectares. The reason is adverse climatic conditions, which led to the loss of some vineyards during the harsh winters of 2005--2006. More than 11 thousand hectares of vineyards had perished over that period and up until today their former areas have not been restored.

Over the period from 2007 to 2012, viticulture developed in quite difficult climatic conditions. In 2007, high temperatures were observed in the summer, reasoning the loss of 2.2 thousand hectares harvest in the Republic of Dagestan. Viticulture and winery industry is quite laborious and capital-intensive sector, because of the ever-increasing costs of planting new vineyards and caring for them, so the average yield in the production of grapes must be at least 70 centners / ha to make a profit in the industry.

7. Conclusion

For the concept of the development of viticulture and winery for 2016--2020 and for the period up to 2025 the Ministry of Agriculture formulated three scenarios. The most likely agency considers the base scenario. To implement it, the industry will need to allocate almost 46 billion rubles from the federal budget. This will increase the domestic market provision level with domestic wine materials to 84 %, expand vineyards areas to 125.7 thousand hectares by 2025. The gross yield is expected to increase to 919.2 thousand tons, and yield -- up to 98 centner/ha. The Government of the Russian Federation plans to increase the vineyards area to 140 thousand hectares by 2020. More than 3 billion rubles should be allocated to the industry to achieve this goal by 2020.

The current wine industry development phase is unique: the excess of supply over demand and new consumers' demands emergence, as a response to crisis, stimulated a serious restructuring of the industry, which is manifested in changing geographical structure of consumption, strengthening the position of new wine-making regions, revising approaches to regulation in individual countries [3].

The implementation of the state policy in the field of viticulture and winery modernization until 2025 will be carried out in 2 stages:

1. the first stage (2016--2020). The main goals are to create an arboretum base, update the material and technical base, ensure the adoption of regulatory measures aimed at creating a favorable investment climate in the field of viticulture and winery;
2. the second stage (2021--2025 years). The main goal is to create the export potential of the Russian Federation, to bring the domestic winery to the world level and fully satisfy the domestic needs for high-quality grapes and wine.

References

- [1] RF Federal State Statistics Service (2011). Area, gross yield and yield of fruit and berry and grape plantations in the Russian Federation. *Bulletin on the state of agriculture*. Retrieved from: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/en/statistics/publications/catalog/doc_1265196018516.
- [2] RF Federal State Statistics Service (2013). *The concept of the development of viticulture and winery in the Russian Federation for the period of 2016--2020*

and the planning period until 2025. Retrieved from: <http://kbvw.ru/images/docs/koncepciya17062016.pdf>

- [3] Simonova-Khitrova, M.Yu. (2015). Modern trends in the development of the world wine industry and the wine market. *Bulletin of MGIMO-University*, no. 6(45), pp. 266-273.
- [4] Usenko, L.N., Udalova, Z.V. (2017a). The revival of the grape-winery industry as one of the promising areas of the Russian agro-industrial complex development. *Accounting and statistics*, no. 3(47), pp. 75--82.
- [5] Usenko, L.N., Udalova, Z.V. (2017b). Development of the production potential of the grape-winery subcomplex of the agribusiness: import substitution, competitiveness. *Ostrovskie readings. Institute of Agrarian Problems of the Russian Academy of Sciences (Saratov)*, no. 1, pp. 295--300.