VITICULTURE IN SERBIA ACCORDING TO STATISTICS AND VITICULTURE ZONING

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Abstract:

After more than 50 years, the Census of Agriculture, conducted in 2012 by Statistical Office of the Republic of Serbia, collected data on present situation in agriculture and viticulture. At approximately the same time, after more than 40 years, new geographical zoning of viticulture production areas in Serbia was carried out by the Ministry of Agriculture, Forestry and Water Management.

In Serbia, the area of about 25000 ha is under vine, out of which 22150 ha is in Central Serbia and Vojvodina. About 75.7% of total area is used for the production of wine grapes and 24.3% is used for the production of table grapes.

Viticulture zoning divides the territory of Serbia into three wine growing units which comprise 22 regions, 77 wine growing districts and a large number of wine growing oases.

Advancement and planned development of viticulture can only be achieved if there is awareness of current state of area under vine, knowledge of assortment, seedling age, potentials of some wine making regions and other necessary conditions.

Key words: viticulture, census, viticulture zoning

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Introduction

Viticulture in Serbia represents a very important branch of agriculture. Viticulture as a labor-intensive field enables engaging more people and achieving higher yields per unit area in comparison to most cultures that are grown in the Republic of Serbia. Rapid development of viticulture is evident as well as its contribution to economic development of the entire country. Bearing in mind that viticulture will affect the development of rural areas, its importance becomes even greater. Viticulture underwent some transformations over the last period so viticulture practices in our country approached the practices of countries which achieved significant results in this field. Awareness of present situation in the area under vine, knowledge of assortment, seedling age, potentials of some wine making regions and other essential aspects are important for advancement and development of viticulture.

The undertaken steps represent the basis for achievement of the set goals. After more than 50 years, the Census of Agriculture, conducted in 2012 by Statistical Office of the Republic of Serbia within the IPA project 2011 (Instruments for Pre-accessions Assistance, 2011), collected data on present situation in agriculture and viticulture. At approximately the same time, after more than 40 years, new geographical zoning of viticulture production areas in Serbia was carried out by the Ministry of Agriculture, Forestry and Water Management within the Twinning Project (Capacity Building and Technical Support for the renewal of Viticulture Zoning and for the System of Designation for Wine with Geographical Indications).

The aim of this paper was to present systematically important information on wine growing units, regions and wine growing districts of Serbia which had been obtained from the above mentioned projects. This enables us to clearly perceive the situation and potentials of Serbian viticulture.

Wine – growing Serbia

Wine-growing Serbia occupies the territory of entire Republic of Serbia at altitudes up to 800 m, but it also occupies the area above this altitude if it is on the list of areas at higher altitude that underwent viticulture zoning. There are three wine growing units in the wine-growing Serbia and those are (map 1.):
1) Central Serbia,
2) Vojvodina,
3) Kosovo and Metohija.

*Map 1: Wine – growing units of Serbia – statistics data*

The wine-growing units consist of geographic units and in that way the territory of AP Vojvodina and parts of Belgrade to the north of the rivers Sava and Danube belong to the wine-growing unit of Vojvodina. The territories of AP Kosovo and Metohija belong to the wine-growing
unit of Kosovo and Metohija, and the wine-growing unit of Central Serbia covers other parts of the Republic of Serbia.

There are 22 wine growing regions (map 2.) with 77 wine growing districts and large number of wine growing oases within these three regions.

Map 2: Wine – growing regions of Serbia

It is assumed that the total area under vine on the territory of the Republic of Serbia occupies about 25 000 ha. According to the data
obtained from the 2012 Census of Agriculture, the total area under vine in wine-growing Serbia occupies 22,150 hectares, excluding the unit of Kosovo and Metohija (the Census of Agriculture was not conducted in 2012 on the territory of AP Kosovo and Metohija).

Grape vine is grown on 17,118 hectares of land in Central Serbia and 5,032 hectares in Vojvodina. According to 2012 Census of Agriculture the wine-growing unit of Central Serbia covers 77.3% and the wine-growing unit of Vojvodina covers 22.7% of total land area under vine.

Wine grape varieties are grown on 17,483 hectares of land which makes 75.7% of total land area under vine. Table grape varieties are grown on 4,667 hectares of land, that is, 24.3% of the total land area under vine. In Central Serbia, table grape varieties are grown on 30.1% of land which is under vine and in Vojvodina it is grown on 16% of land area.

In Serbia, there are 80,341 agricultural households which is about 12.7% of the total number of households in the Republic of Serbia. Agricultural households concentrated on the grape production have, on average, 0.28 hectares of land under vine. The average number of hectares of land cultivated by one household in Central Serbia is 0.23; however, that number is considerably higher in Vojvodina and amounts 0.85 hectares.

Map 3 shows the data collected by the regions of the agricultural census 2012.

**The wine-growing unit of Central Serbia**

There are 13 wine growing regions within the wine-growing unit of Central Serbia (maps 4. and 5.):

1. Pocerje-Valjevo region,
2. the region of Negotinska Krajina,
3. Knjaževac region,
4. Mlava region,
5. Toplica region,
6. Niš region,
7. Nišava region,
8. Leskovac region,
9. Vranje region,
10. Čačak – Kraljevo region,
11. the region of Tri Morave,
12. Belgrade region,
13. Šumadija region.

Map 3: Regions of wine – growing Serbia – statistics data

Pocerje-Valjevo region

Pocerje-Valjevo region is located south of the Sava River and east of the Drina River, on the slopes of mountains Cer and Vlašić, in the upper parts of the basins of the rivers Tamnava, Ub, Kolubara and Ljig to the east, and in the basin of the river Jadar to the west. The region is
surrounded with the mountains Suvobor (866 m) and Maljen (1103 m) in the south, and mountain Cer (687 m) in the south east. The region has three wine growing districts: Pocerje, Podgorje and Kolubara-Ljig districts.

The region covers an area of 190.6 hectares of land under vine, out of which 49 % of land is under table grape vineyards. The largest number of vineyards is in the wine growing district of Pocerje (74.5 ha).

In this region, 1.153 households have vineyards on the land of average size of 16 ares. The largest number of vineyards is in the municipalities of Šabac and Koceljevo.

The region of Negotinska Krajina

The region of Negotinska Krajina is located in the easternmost part of Central Serbia along the borders with Romania and Bulgaria. The region is surrounded with mountains Miroč (768 m) in the north-west, Veliki Greben (656 m) in the west and Deli Jovan (1136 m) in the south-west. The River Danube flows in the northern, north-eastern, eastern and south-eastern part of the region which gives specific characteristics to this region. There are five wine growing districts in this region: Ključ, Brza Palanka, Mihajlovac, Negotin and Rogljevac-Rajac.

In this region there are 978 hectares of vineyards which are mostly wine grape vineyards (over 91% of the total land area under vine). The largest area under vine is in the Rogljevac-Rajac wine growing district (419 hectares).

In this region 3.104 households have vineyards, which is more than 45% of the total number of agricultural households. The average size of a vineyard is 31.5 ares.

Knjaževac region

Knjaževac region is located around the upper course of the river Timok, surrounded with mountains. The region is surrounded with mountains Deli Jovan (1141m) in the north, Crni Vrh (1043m) and Malinik (1158m) in the north-west. In the south-west part of the region there are mountains Rtanj (1565m) and Tupižnica (1160m); Tresibaba Mountain (787m) is in the south and there are slopes of Stara Planina Mountain in the south-east part of the region. There are four wine growing districts in this region: Bor, Boljevac, Zaječar and Potrkanje.

The region covers 1076.47 hectares of vineyards, out of which 44% are extensive vineyards. About 6473 agricultural households grow grape vines, that is, more than 36 % of the total number of households. The average size of a vineyard cultivated by one household is 16.6 ares.
Mlava region

Mlava region occupies the vineyard areas on the right side of the lower course of the river Velika Morava and in the basins of the rivers Resava, Mlava and Pek. There are Homoljske Mountain (952m) and mountain Beljanica (1339m) along the east side of the region. The river Danube flows in the north part of the region and the river Velika Morava in the west part of the region which is why this region is good for grape vine growing and good grape quality. The region has three wine growing districts: Braničevo, Požarevac and Resava.

Mlava region covers 814.37 hectares of vineyards, and more than half of the vineyards are extensive vineyards. Wine grape varieties are grown on 61 % of the area and table grape varieties are grown on 39% of the land area. The largest number of vineyards can be found in Požarevac wine growing district (370 hectares).

In this region, 6.848 households have vineyards which makes 22.41 % of the total number of agricultural households. The largest number of vineyards is recorded in the municipalities of Petrovac na Mlavi and Veliko Gradište.

Toplica region

Toplica region occupies the area of vineyards along the entire course of the river Toplica and its tributaries. In the north part of the region there are mountains Veliki Jastrebac (1492m) and Mali Jastrebac (946m) and they are two massifs of the mountain Jastrebac and belong to the Rhodope Mountains. In the south part of the region there are mountains Vidojevica (1155 m) and Pasjac (901 m) which also belong to the Rhodope Mountains. There are three wine growing districts in the region: Prokuplje, Jugobogdanovačko and Žitorađe.

Toplica region covers 764.73 hectares of vineyards, out of which 590 hectares are used for wine grape production. In this region, the largest vineyard areas of about 371.17 hectares are located in Jugobogdanovačko wine growing district.

In this region, 5.610 households have vineyards which makes 28.25% of the total number of agricultural vineyards. The largest number of vineyards is recorded in the municipalities of Žitorađe and Merošin.

Niš region

Niš region comprises vineyards located in the wide ravine of the lower basin of the river Nišava and lower basins of the rivers Južna
Morava and Moravica. The region is characterized by hilly-mountain terrain. Orography of this region are slopes of mountain Ozren (1178 m) in the north-west part of the region, Svrljig Mountains (1334 m) and Suva planina (1810 m), which are part of the Carpathian Mountains, in the south-east and mountain Jastrebac (1491 m) in the west part of the region and it belongs to Rhodope Mountains. The river Južna Morava flows through the central part of the region and the Nišava River flows through the southern part of the region. There are six wine growing districts in this region: Sokobanja, Aleksinac, Žitkovica, Čegar, Kutin and Svrljig.

Niš region covers 1311.85 hectares of vineyards where mostly wine grapes are grown (1022 hectares). The largest number of vineyards is in wine growing district of Čegar on about 554.35 hectares.

In this region, 8.415 households have vineyards, which is about 33.15 % of the total number of agricultural households. Most vineyards are located in the municipalities of the City of Niš and Aleksinac.

Nišava region

Nišava region covers the area with vineyards which are located in the narrow ravine of the medium basin of the river Nišava. The region is surrounded with Svrljig Mountains (1334 m) in the north, mountain Vidlič (1413 m) in the north-east, Vlaška Mountain (1443 m) in the south and mountain Suva planina (1809 m), which belongs to the Balkan Mountains, in the south-west. Mountain Belava (946 m) is located in the central part of the region. There are three wine growing districts in this region: Bela Palanka, Pirot and Babušnica.

Nišava region covers 470.88 hectares of vineyards out of which 70 % are extensive vineyards. The grapes grown in these vineyards are wine grapes (92%). Vineyards are mostly located in wine growing district of Pirot.

In this region, 3.598 households have vineyards which is 30.3 % of total number of agricultural households. The largest number of vineyards is in the municipalities of Pirot and Bela Palanka.

Leskovac region

Leskovac region covers the area of vineyards which are located around the City of Leskovac in wider area of the upper basin of the river Južna Morava and its tributaries such as Pusta Reka, Veternica and Vlasina. There are four wine growing districts in this region: Babičko, Pusta Reka, Vinaračko and Vlasotince.
According to 2012 census of agriculture, Leskovac region covers 1459.27 hectares of vineyards where mostly wine grapes are grown.
(88%), and 43.3 % are extensive vineyards. Vineyards are mostly located in Vinarac and Vlasotince wine growing districts.

In this region, 10,863 households have vineyards which makes 33.6 % of total number of agricultural households. The average size of a vineyard cultivated by one agricultural household is 13.4 ares.

Vranje region

Vranje region covers the area of Vranje valley around the river of Južna Morava. The largest part of the region is located at the altitude of 390 to 780 m above sea level. However, wine growing districts with vineyards are located at the altitudes of 420 to 650 m above sea. There are three wine growing districts in this region: Surdulica, Vrtogoško and Buštranksko.

According to 2012 census of agriculture, Vranje region has 421.31 hectares of vineyards (about 409.58 hectares of fruitful vineyards, that is, 97.22 %) out of which 103.58 hectares of table grape vineyards and 317.73 hectares of wine grape vineyards. Vineyards are mostly located in Vrtogoško wine growing district (308.41 hectares).

In this region, 2,613 households have vineyards which is 11.79 % of total number of agricultural households. The average size of a vineyard cultivated by one agricultural household is 16.1 ares.

Čačak – Kraljevo region

Čačak – Kraljevo region covers the area of Čačak ravine and the other side of the river Zapadna Morava, as well as other smaller locations in the valley of the river Ibar. In the north-west part of the region there are two mountains Ovčar (985 m) and Kablar (889 m), and in the south part there is mountain Jelica (929 m). There are three wine growing districts in this region: Ljubić, Jelica and Ibar.

The region covers 64.88 hectares of vineyards, most of which are in Jelica wine growing district. Wine grape varieties are grown in 68% of the area.

In this region, 397 households have vineyards, which makes 1.24 % of total number of agricultural households. The average size of a vineyard cultivated by one agricultural household is 16.3 ares.

The region of Tri Morave

The region of Tri Morave is located in the central part of Serbia in lower basins of the rivers Zapadna Morava and Južna Morava and upper basin of the river Velika Morava and its tributaries. It is surrounded with mountains – Gledićke Mountains and Bešnjaja in the west and north, Goč,
Željin, Kopaonik and Jastrebac in the south, and Beljanica, Kučajski Mountains, Rtanj and Ozren in the east. Most of the region spreads at the altitudes from 200 to 650 m but vineyards and wine growing districts are at altitudes ranging from 200 to 350 m. There are nine wine growing districts in this region: Paraćin, Jagodina, Jovac, Levac, Temnićko, Trstenik, Kruševac, Župa and Ražanj.

The region covers 7528.76 hectares of vineyards, which makes it the largest area under vine in Serbia. Wine grape varieties are mostly grown in this region (78% of the total land area under vine). The largest number of vineyards is in Trstenik, Župa and Kruševac wine growing districts.

In this region, 18,129 households have vineyards, which makes 33.16% of total number of agricultural households. The largest number of vineyards is in the municipalities of Aleksandrovac and Trstenik. The average size of a vineyard cultivated by one agricultural household is 41.5 ares.

Belgrade region

Belgrade region covers the area of south part of the rivers Sava and Danube, starting from the mouth of the river Kolubara in the river Sava to the mouth of the river Velika Morava in Danube and the area on the slopes of the mountains Avala and Kosmaj. There are five wine growing districts in this region: Avala-Kosmaj, Grocka, Smederevo, Dubona and Lazarevac.

According to the 2012 census, the region is covered with 1129.55 hectares of vineyards and those are mostly table grape vineyards on 62.3% of the total land area under vine. This region is characterized as the largest area with table grape vineyards in Serbia.

In this region, 4,421 households have vineyards, which makes 11.88% of total number of agricultural households. The largest number of vineyards is in the municipalities of Grocka, Smederevo and Mladenovac.

Šumadija region

Šumadija region covers the part of Šumadija with hilly terrain and it spreads from a mountain Rudnik to the river Velika Morava. Orography, that is, relief characteristics of this area are the Šumadija Mountains which belong to the group of Dinara Mountains, the so-called Šumadijska Greda. Mountains which are part of the previously mentioned group are Kosmaj (626 m), located in the north-west part of the region, Gledićke Mountains (922 m) in the south, Kotlenik (749 m), located south
of the Gruža Lake, Rudnik mountain (1132 m) in the west and mountain Bukulja (696 m) also in the west part of the region. There are four wine growing districts in this region: Krnjevac, Oplenac, Rača and Kragujevac.

In this region 1119.79 hectares of land are under vineyards with even percentage of table grape varieties (52%) and wine grape varieties (48%). Based on the area of vineyards, the most important wine growing district is Oplenac district which covers 545.7 hectares.

In this region, 5,000 households have vineyards, which makes 12.84 % of total number of agricultural households. The largest number of vineyards is in the municipality of Topola.

The wine-growing unit of Vojvodina

There are 7 wine growing regions in the unit of Vojvodina (map 6.):
1. Srem region,
2. Subotica region,
3. Telečki region,
4. Potisje region,
5. Banat region,
6. South Banat region,
7. Bačka region.

Srem region

Srem region is located on the slopes of Fruška Gora Mountain facing the rivers Danube and Sava, excluding the area of national park ‘Fruška Gora’. The large part of the region is located at altitudes of 70 to 270 m. However, wine growing districts and vineyards are located at altitudes of 90 to 270 m. Fruška Gora wine growing district is located in Srem region.

Srem region covers 2215.55 hectares of land, out of which Fruška Gora wine growing district covers 1865.67 hectares. Mostly grown grapes are wine grape varieties; they are grown on 84% of the land in this region and on 85% of the land in the wine growing district.

In this region, 2,200 household have vineyards, which makes about 5.29 % of the total number of agricultural households. The largest number of vineyards is in the municipality of Šid.

Subotica region

Subotica region covers sandy terrain of Subotica-Horgoš Sands in the easternmost part of Serbia along the border with the Republic of Hungary. Subotica region consists of two separate parts: eastern and
western parts. There are three wine growing districts in this region: Rđica, Palić and Horgoš.

The region covers 312 hectares of vineyards. The largest number of vineyards is in Palić wine growing district (197 hectares). In this region, 447 households have vineyards, which makes about 5.44% of the total number of agricultural households. The largest number of vineyards is located in the municipality of Subotica.

Telečki region

Telečki region is located in the central part of Bačka, on the territory of Telečka kosa and Telečka plateau. There are three wine growing districts in this region: Zapadnotelečko (Telečka Kosa), Centralnotelečko (Bačka Topola), Istočnotelečko (Mali Iđoš).

According to the 2012 Census of Agriculture, the region covers 115.3 hectares of vineyards. Table grape varieties are grown on almost 35% of the land, which represents high rate of table grape production in comparison to average rate of production in Serbia, especially considering the fact that climatic factors in this region are not favorable for table grape production.

In this region, 334 households have vineyards, which makes 1.99% of the total number of agricultural households.

Potisje region

Potisje region covers vineyards of eastern Bačka and west Banat in the vicinity of the river Tisa and it spreads to the north from Kanjiža to the mouth of the river Tisa in Danube. The region is located in the area along the river Tisa which has significant influence on the microclimate of the region and quality of the produced grapes. There are three wine growing districts in this region: Severno Potisje, Srednje Potisje and Južno Potisje.

Potisje region covers 309 hectares of vineyards which are mostly located in Severno Potisje wine growing district (114.84 hectares) and the municipality of Čoka (94.22).

In this region, 895 households have vineyards, which makes 3.49% of the total number of agricultural households.

Banat region

Banat region spreads in Banat, and it consists of oases which are grouped in Kikinda and Srednji Banat wine growing districts.
Map 6: Wine-growing regions and district of Vojvodina - statistics data
In the region, there are 132 hectares of vineyards in the municipalities of Kikinda and Zrenjanin. Table grape varieties are grown on more than 36 % of the land under vine.

In Banat region, 800 households have vineyards, which is about 6.7 % of the total number of agricultural households.

South Banat region

South Banat region is located in the southeastern part of Vojvodina on the west slopes of the Vršac Mountains and in the area of Deliblato Sands. It is located in mostly plain terrain and partly on hilly terrain in the northeast part where 18 km long Vršac Mountains (641 m) spread from east to west and create favorable conditions for grape production. In the southeastern part of the region, the vineyards are located on the territory which is affected by climatic conditions of the Carpathian Mountains, the river Danube and Delibato Sands. There are three wine growing districts in this region: Vršac, Bela Crkva and Deliblato Sands.

South Banat region covers 1730.69 hectares of vineyards, out of which Vršac wine growing district covers 1405.48 hectares.

In this region, 786 households have vineyards, and an average size of a vineyard per one household is 2.2 hectares. The largest number of vineyards is in the municipality of Vršac.

Bačka region

Bačka region spreads in Bačka and it consists of three oases: Temerin, Bački Monoštor and Karavukovo.

This region covers 18.87 hectares of vineyards, out of which 60% are wine grape vineyards. The largest number of vineyards is in the oasis Bački Monoštor.

In this region, 325 households have vineyards, which is about 2.33 % of the total number of agricultural households.

The wine-growing unit of Kosovo and Metohija

There are two wine growing regions in this wine-growing unit:

1. North Metohija,
2. South Metohija.

The Census of Agriculture in 2012 was not conducted on the territory of AP Kosovo and Metohija.
North Metohija region

North Metohija region spreads on the terrains in the northwest part of Metohija from the slopes of Mokra Gora in the north to Pećka Bistrica in the south. It has two wine growing districts: Istočko and Peć.

South Metohija region

South Metohija region spreads on the terrain in the southwest part of Kosovo and Metohija, that is, in the area of South Metohija. It has five wine growing districts: Đakovac, Orahovac, Prizren, Suva Reka and Mališevac.

Instead of conclusion

According to the statistical data, there were 100,000 hectares of vineyards in Serbia in the 1980s of the last century. Today in Serbia, there are 22,150 hectares of vineyards, out of which a fourth is cultivated extensively. There was a dramatic decrease in the size of the area under vine in the 1990s of the last century. The government is making considerable effort to encourage establishment of new vineyards by providing subsidies and implementing other measures; however, despite all this, renewal of viticulture is a slow process. New vineyards are established with imported planting material, which is why the assortment is characterized by foreign white and red wine grape varieties. There are a small number of autochthonous and domestic new grape cultivars.

Over the last few years, there was a significant progress in improving technologies for viticulture and enology and in improving wine quality and production of wine with geographical indication. This is proved by the fact that the export of qualitative wine with geographical indications has risen recently.

A large number of measures have to be taken at different levels in order for Serbian viticulture to be renewed and intensified. Although subsidies given for viticulture and enology are among the largest subsidies in the region, the government should continue providing support for new vineyard establishment, clone selection and certification as well as for the introduction of new modern technology. The producers have to change their habits; they have to cooperate (especially because of the label for geographical indications) and broaden knowledge and improve technologies. National scientific and research work has to be supported and developed.


