

## Market Intelligence Fact Sheet (Format for results of RMA)





### Ararat Marz

#### Second selected crop

*Botanical name of the crop* - *Vitis vinifera* L.

*English name* - **Grapes**

*Local (Armenian) name* – **Khaghogh** (Խաղող)

Photo 1 (full plant/tree)	Photo2 (harvested fruits)
	 
Photo 3 (processed product A)	Photo 4 (processed product B)
	

## 1. Historical origin and cultivation history in project sites

Wine growing and grape production has a long history within the entire Caucasus region. It is among the most developed areas of Armenian agriculture and among principle sources generating significant trade incomes from export.

Some researchers claim that it is very difficult to date the appearance of the first cultivated vines, and that, geographically, the Trans-Caucasian countries of Armenia and Georgia seem to be the birthplace of viticulture. According to another source, the origins of viticulture are so remote in time that nothing certain can be known concerning them. By 3000 B.C. at the latest and probably much earlier, viticulture is thought to have come down from ancient Armenia, eventually reaching an advanced stage of sophistication in the states of Mesopotamia, in all the lands of Syria and Phoenicia, and in the Egyptian Delta.

One historian cites 7000 B.C. as a starting point in the Middle East, where conditions necessary for organized winemaking are said to have arrived. Equally important at that time was the noted invention of pottery, which would serve as the first wine containers. The historian claims that in 6000 B.C. Armenia winemaking appears, as well as the first vineyards, where domesticated Muscat vines were grown.

Ancient rock inscriptions were found in the town-fortress and military/administrative center of Urartu (now called Ararat), Erebuni, founded in 782 B.C. on the territory of Armenia's present capital city of Yerevan. Archeological excavations not far from Yerevan, placed in the period 1949-1950 by academician and author, B. Pyotrovsky, established that vine-growing and wine-making were developed in Armenia in the 7th century B.C. In those times vine-growing and fruit-growing had a broad presence in the Urartu Kingdom. The richest evidence of ancient agricultural production in Armenia was discovered during excavation of the 5th century B.C. town of Tishebaini (now called Karmir Blur or 'Red Hill') in the Armenian upland region, specifically in the Ararat valley - now known as the Republic of Armenia. During the kingdom's excavations of Karmir Bloor were detected karases (a karas is a very big argil jug which is usually buried under ground), funnels, candles, sickles, pitchforks, and inscriptions, which indicate that vineyards and fruit yards had existed on the right bank of Hrazdan river, a river that runs through Yerevan. Also unearthed in the Urartu Kingdom was sulfur, signifying that in ancient times wine manufacture operated at an advanced level. Vine-growing and wine-making enjoyed great celebrity and rulers of the State Urartu supported the industry by building irrigation channels, terraces and other production accessories. From the text of cuneiform it is understood that wine and vineyards possessed religious significance as well; grapes and wine complemented sheep in sacrificial offerings. They were used also as medical remedies - chronicled at Matenadaran - Armenia's manuscript library and repository for Armenia's medieval written culture.

## 2. Conservation status now

Armenia has five wine growing regions: the Ararat Valley, in which the majority of viticultural activities take place and where is the project communities – Nor Ughi and Surenavan (73.4%), followed by the foothills of the Ararat Valley with 11.6%, the North-East of Armenia produces 8.3% of wines, followed by Vayots Dzor region with 5.6% and Syunik with 1.1%.

Researchers found proof of the wild wine variety *Vitis Vinifera silvestries*, which is the archetype of *Vitis Vinifera* in the slopes of the old Armenia. The old Armenia reached over wide parts of eastern Turkey, parts of Azerbaijan and Georgia. Vines were planted mainly in the slopes of valleys. In the south-west of Yerevan during archaeological research evidence of irrigation channels, wine cellars and production tools such as clay pots were found, that date back to the 10th century B.C. Another source refers to archaeological findings of the 7th century B.C. that discovered evidence of sulfur, which proofs the high level of development and also popularity wine production had in these early years. Wine was used for consumption as well as for religious purposes, it was given as offers in form of grapes and wine, and for medical purposes. Recently evidence for bigger scale wine production 3.000 years ago was found through archaeological excavations in Erebuni, near Yereavan. Throughout this, wine storage facilities and corks were discovered. Wine growing in Armenia also experienced several downturns due to wars and invasions from Arabs and Persians.

Armenia has a wide range of grape varieties. Around 40 varieties are commonly planted, mainly in the Ararat Valley. Refers to 48 varieties, of which 30 are used commercially. Another report reveals that originally around 800 indigeous and foreign varieties existed in Armenia. Though due to historical reasons (anti-alcohol campaign and privatization) many vanished. The widely planted white Mashali grape is used for brandy production. In addition to that white varieties like Voskeat and Garan Dmak are grown and used for wine produce. The most common red varieties for wine production are Areni (widely spread especially in the Areni region) and Kahet. It says that only 10% of planted grapes are used for table grape production.

### Areni

The best known of Armenia's varietals, areni is a thick-skinned, late-ripening grape. It's considered one of the country's finest, and produces fresh, bright red wines with soft, elegant red fruit flavors.

### Kakhet

This late-ripening varietal is thinner-skinned than areni, and deep violet-purple in color, with small berries that make for sweet, fresh, floral juice.

### 3. Nutritional values and unique traits

There is no denying that grapes are one of the world's most popular fruits.

Grapes' nutritional value and health benefits are also undeniable. Not only are grapes delicious as a snack or in a meal, they also contain fiber. Fiber adds bulk to your diet and can help keep you feeling satisfied throughout the day. Moreover, fiber-rich foods such as fruits help provide a feeling of fullness with fewer calories.

### Health Benefits of Grapes

#### 1. Beneficial Antioxidants

Grapes are rich in antioxidants, including resveratrol and flavonoids. Research suggests that whole grapes deliver the same amount of antioxidants in grape juice and wine with the added benefit of providing dietary fiber. See all the vitamins & nutrients in grapes.

#### 2. Prevent Heart Disease

The polyphenols found in grapes have been shown to reduce the risk of heart disease and support a healthy heart by promoting relaxation of blood vessels to help maintain healthy blood flow and function.

#### 3. Weight Loss

To lose weight, you should eat more foods, like grapes, that are low in energy density or calories. This helps you feel full on fewer calories. Research shows eating flavonoid-packed grapes can also help you maintain a healthy weight.

#### 4. Eye Health

Research suggests that regular grape consumption may play a role in eye health by protecting the retina from deterioration. Specifically, a grape-enriched diet resulted in a protective effect on retinal structure and function.

#### 5. Blood Pressure

Grapes are recommended for people with high blood pressure to negate the effects of sodium on the body. Seedless green grapes contain around 175 milligrams of potassium per cup, red grapes have nearly 290 milligrams, and black grapes have 200 milligrams.

#### 6. Blood Sugar and Diabetes

They may taste sweet, but grapes don't elevate blood sugar, nor do they significantly increase insulin levels. So people with diabetes can eat grapes. And choosing foods with a



lower insulin response rate, like grapes, can prevent you from developing the insulin resistance characteristic of Type 2 diabetes.

## 7. Colon Health

In a small study of colon cancer patients, a grape-enriched diet was shown to inhibit certain genes that promote tumor growth. This was observed in the healthy tissue of the subjects' colons, indicating the potential role for grapes to maintain a healthy colon.

### Vitamins and Nutrients in Grapes

There are several key vitamins and nutrients in grapes that are vital for the health and care of your body, which you can get simply by adding grapes to your diet.

#### Vitamin C

Each one and a half cup serving of grapes contains 25% of the recommended daily value of Vitamin C. Vitamin C is important for growth and repair of all body tissues, helps heal cuts and wounds, and keeps teeth and gums healthy.

#### Vitamin K

Grapes are an excellent source of Vitamin K, a fat-soluble vitamin known for its role in helping blood clot properly. Vitamin K is also essential to building strong bones and preventing heart disease.

#### Fiber

Whole or chopped grapes contain a small amount of fiber. Dietary fiber, as part of an overall healthy diet, helps reduce blood cholesterol levels and may lower the risk of heart disease. Keep in mind that fruit juices contain little or no fiber.

#### Polyphenols

Polyphenols are micronutrients that play a role in the prevention of degenerative diseases. Resveratrol, a type of polyphenol, is found in the skin of green, red and black grapes. Studies suggest that it may offer even more health-promoting benefits.

#### Antioxidants in Grapes

Antioxidants maintain health by defending against damaging free radicals that can harm healthy cells. Grapes have been shown to increase the activity of these antioxidant defense pathways including the production of glutathione, the most abundant cellular antioxidant in the heart. This is another of the many health benefits of grapes.

#### 4. Uses and derived products

Grapes can be processed into a number of interesting products. Scarcely any other fruit can be marketed in so many ways - whether liquid, as wine, sparkling wine, brandy or grape juice - or solid, as table grapes, raisins or sultanas. There are virtually infinite possibilities for both red and white grapes. Thus, it comes as no surprise that many vintners have added 'other products of the grape' to their portfolios as 'specialties'.

Mostly in Armenia processed grape is used for alcoholic drinks production mainly for brandy and wine.

The grape/fruit wine and brandy sector in Armenia is one of crucial segments for economic growth and employment. Consequently, the private sector development programs by the government and other stakeholders are paying special attention to the progress of the Armenian wine sector. A clear definition and statement towards sustainability and the awareness between the wine industry and its impact beyond the wine industry will be of further importance.

The amount of alcoholic drinks from processed grapes – (2012-2016) (thousand liters)

	Production				
	2012	2013	2014	2015	2016
<b>Brandy</b>	18514,1	20383,3	18708,9	16947,6	21529,2
<b>Wine</b>	5718,0	6680,3	6176,0	5931,9	6809,6
<b>Champagne wine</b>	478,8	536,4	634,4	658,1	713,4

Source: National Statistical Service of the Republic of Armenia

Volumes of wine and brandy produced in Armenia have been showing a growth. There was a slump in production in 2009, which was due to bad weather conditions, but from the next year on the increasing trends continued. The Figure shows the statistics on wine, brandy and champagne wine production from 2012 to 2016.

#### **Brandy**

Production of Armenian Brandy for Armenians is not only a business but, first of all, a tradition they keep improving year by year. According to Bible, Armenian Highland is considered to be the homeland of grape and wine. There were ideal conditions for improving the art of winemaking. According to tales the first of winemaker was Noah. He was the one who came with his Ark to Ararat

valley and put the first grapevine.

The grape growing in Ararat valley is the best in Caucasus. The main symbol is Ararat, where they created the legendary cognac.

Archaeological excavations near the Ararat Mountain, where the Urartian Arin-Berd, Karmir Blur, cities were located, prove high-quality winemaking among Armenians from ancient times.

After, ancient Greek historians Herodotus Halicarnassus, Xenophon and Strabane proved: over 2500 years ago they used to export high-quality wines from Armenia to other countries.

Armenians started production of brandy in 1887. Merchant Nerses Tairov founded the first wine and gin factory at the place of the Hin Erivan castle. Starting the brandy production was Tairov's cousin's idea though. Vasili Tairov helped him to start the business. This was probably the first cognac factory in Russian Empire.

### **Raisin**

Raisins are dried grapes, thus their name, which derives from the Latin word racemes, meaning "a cluster of grapes or berries." Grape growing (viticulture) appears to have started around 6000 BC in the Transcaucasia area (present-day Armenia, Azerbaijan and Georgia) and, while it is reasonable to assume that dried grapes were consumed from early days, the Bible provides the first written mention of raisins around 1000 B.C. during the era of King David (Sun-Maid). By the 9th century A.D. a least 78 varieties of grapes were being grown in the Near East (Damania). By the late 1800s, Armenian raisin producers had settled in the area and used their expertise to make the industry thrive.

Raisins are dried grapes, thus their name, which derives from the Latin word racemes, meaning 'a cluster of grapes or berries'. Raisins are the original candy—nature's candy. They are one of the most nutritious 9 dried fruits in the world. Raisins are cholesterol-free, low in sodium and totally fat-free. They provide many necessary vitamins and minerals, including iron, potassium, calcium and certain B vitamins. Raisins are a good source of fiber and rich in antioxidants. Raisins are 70% pure fructose (a natural form of sugar) which is easily digested for quick energy.

### **Grape Seed Oil**

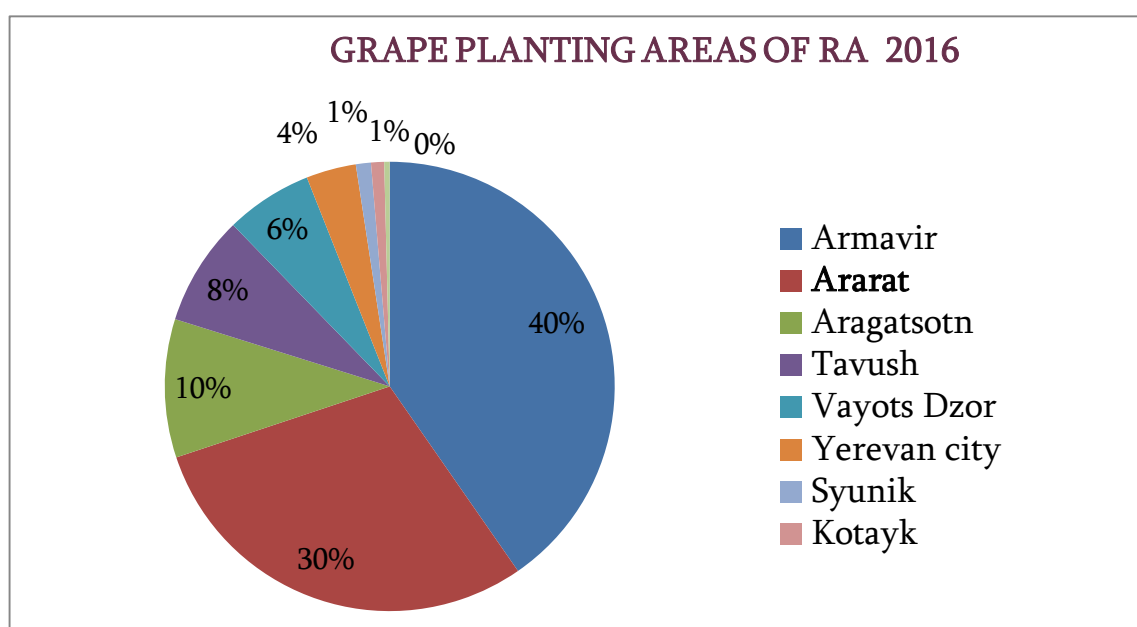
Since the grape seeds are not used in wine preparation, they are purchased from local winemakers. To extract the purest possible oil, the seeds are cold-pressed, a process that eschews heat and is capable of preserving the delicate phytonutrients present in the grape seed. The production of grapes seed oil is a new developing branch in Armenia. It is mainly used in cuisine, medicine and cosmetic products

## Grape Juice

Several producers in the region make grape juice for which a press and unstemming equipment is used. Then, it is fermented in reservoirs, cooled in special refrigerators, properly filtered and bottled. Its volume, and therefore its share in sales, is not high.

## 5. Agricultural production

The two main grape producing regions are Ararat and Armavir, with more than 80% of the grape production; then follow the regions of Tavush, Aragatsotn, Areni in Vayots Dzor, Yerevan city and Syunik. There are many varieties, from white and red wines, dry to semi-sweet wines, and sparkling wines.

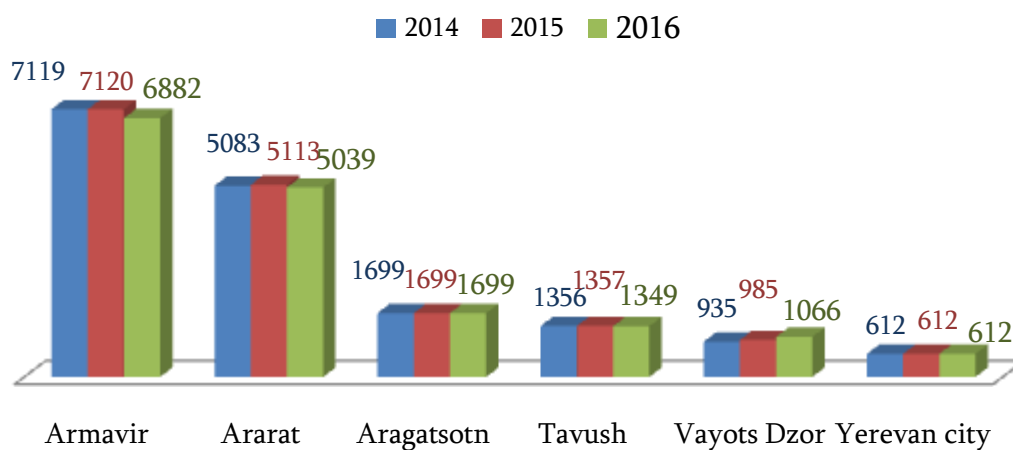


Source: National Statistical Service of the Republic of Armenia

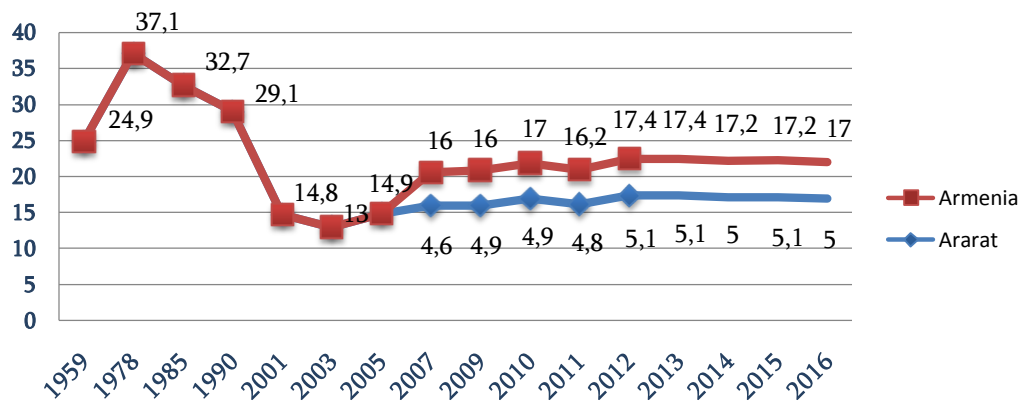
Over 70% of grape production in Armenia is in Ararat and Armavir Marzes. Not surprisingly many processing plants are located in these two marzes to minimize transportation expenses and avoid grape fermentation in the transportation process.



### Sown areas of Grape by marzes (ha)



### Armenian's and Ararat region's plantation sizes of vineyards 1959-2016 (thousand ha)



	Nor Ughi		Surenavan	
	2016	2017	2016	2017
Total land (ha)	26	30	103	103
Yield (t/ha)	10-12	10-15	8-10	8-10
Price/kg (AMD)	110-140	100-120	110-140	100-120

## PLANTING AREAS OF GRAPE, AVERAGE YIELD CAPACITY AND GROSS HARVEST

	Sown areas (ha)		Yield capacity (centner/ha)		Gross harvest (ths.tons)	
	2015	2016	2015	2016	2015	2016
<b>Republic of Armenia</b>	17 296	17 059	188,2	110,0	309,2	178,8
<b>Ararat marz</b>	5 113	5 039	250,4	154,3	125,3	76,0

Source: National Statistical Service of the Republic of Armenia

### 6. Demand and consumer interests

During the period 1995 to 1999 annual prices of grapes fell significantly due to structural changes that took place in agriculture over the last couple of years in response to the market place. The main shift was towards products in high demand that did not include grapes. Also, domestic food prices were affected by global market conditions including food imports. In addition, the limited consumer demand for grapes and other agricultural products was a direct function of the low incomes of the Armenian population, aggravating the crisis in agriculture.

The production costs of grape produce in Armenia are quite high, they are almost on the same level as Europe. This is mainly due to high costs of irrigation, different types of landscapes found and land preparation costs. The costs of planting for 1 ha of vineyards, including all maintenance costs for the first four years in Europe between 28.000-35.000 USD, in Armenia between 28.000-32.000 and in Georgia by 7.800-10.000 USD.

The price of the grapes that is used for brandy and wine production are different due to several factors.

Years	Price per one kg (AMD)
2017	100-120
2016	120-130
2015	140-150

In case of grape procurement, the average price paid for a kg of grape was about 175 AMD. The farmers were paid immediately in more than 40% of cases observed, whereas 9% of wineries reported processing the payment to farmers after one month period.

Almost one third of companies support their suppliers (farmers) through providing advice, transporting the grape, financing purchase of fertilizers or new grapevines, or providing advance payments. Cases of transportation support and advice provision have the highest share – 36% and 34%, correspondingly.

### Demand

Wine is inseparable part of Armenian culture, traditions and being. Wine is the product one can find in almost every Armenian family. Wine consumption is quite high and in many of cases even families living in urban areas do their best to buy the grapes and produce wine by themselves.

Demand on wine is also very high in restaurants and bars. They offer customers wide range of wines- produced as by family holdings, also winery factories; some of traditional restaurants also produce their own branded wines. Supermarket chains and specialized wine stores also have big choice of wine varieties. Large wine factories run their own branded wine stores in large cities.

Grape processing companies are about 50 out of which 12 are comparatively large (“Yerevan Cognac Factory” CJSC, “Artashat Vinkon” CJSC, “Ararat Cognac, Wine, Vodka Plant” OJSC, “Proshyan Cognac Factory” LLC, “Ararat Wine Factory” LLC, Avshar Wine Factory” LLC, “Shahumyan Vin” LLC, “Shahnazaryan Wine Cognac House” LLC, “A.K.Z.” LLC, “Samkon” LLC, “Armenian Wine Factory” LLC, “Hayasi Group” LLC). Annual total production capacity of processed grape is about 265 thousand tons. Average number of employed people according to the staff list is 2200.

There are 7 factories located in Ararat Province.

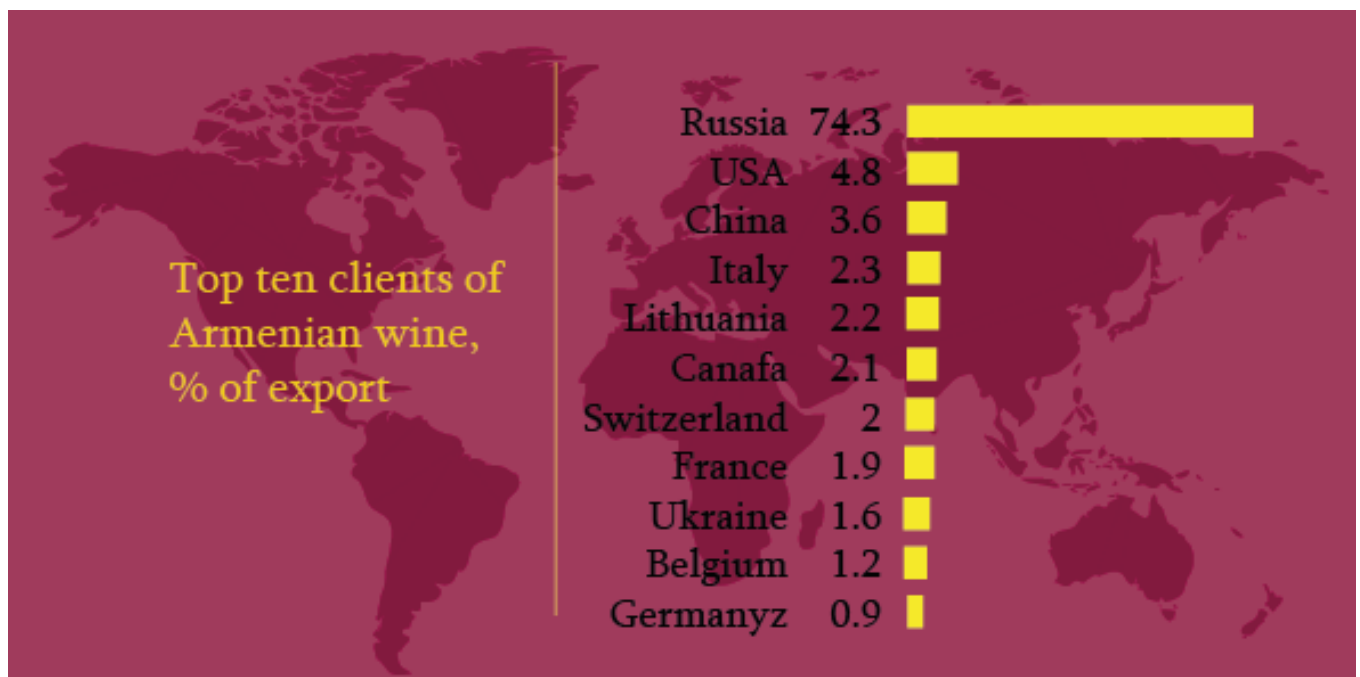
- “Artashat VinCon” Factory      ● “Mrganush” Wine and Brandy Factory
- ● “Ararat Cognac Factory”-“A.K.Z.” LTD
- “Avshar” Wine Factory      ● “Ararat wine factory” LLC
- “Eraskh” Wine and Brandy Factory



Local population either buy the grapes and produce wine or buy the wine from the family holding based on personal contacts. During last period winery factories also started producing bulk wine targeted on local markets.

Based on expert assessment, only 15-20% (sometimes even less) of produced wine is sold on Armenian market, whereas remaining part is intent for export.

Generally, Armenian brandy and wine possesses exceptional export potential. Official trade data demonstrates that export indicators and the number of courtiers are increasing. It's obvious, that the diversified export markets create certain guarantees for the producers.



**Armenian brandy and wine production, export and import**  
**(thousand liters) from 2014 to 2016**

Product	Local production			Export			Import		
	2014	2015	2016	2014	2015	2016	2014	2015	2016
Brandy	18708,9	16037,5	21529,2	18556	15807,8	20518,8	210,8	6,5	5,5
Wine	6176	6590	7523	2120,7	1451,6	1829,9	253,8	312,1	268,7

Source: National Statistical Service of the Republic of Armenia



## 7. Value Chain Map

Figure: Movement of different grape varieties

