Assessment of viticulture and winemaking vulnerability in the expected conditions of climate change in Ararat valley and foothills.

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The work aims to study and analyze climate changes in the study area, to discuss and estimate the vulnerability of climate change on viticulture and wine-making, to work out the ways of climate change prevention, reduction of negative effects and adaptation. For solving these problems, theoretical and informational bases are appropriate studies, particularly the works about climate change, long-term development programs, projects, and decisions of the government, reports. As a source material, actual agrometeorological observations data of the Ministry of Emergency Situations of the Republic of Armenia “Service for Hydrometeorology and active influence on atmospheric phenomena” and the data of the RA National Statistical Service have been used. As a methodological basis, the following were used: characterization, geographical and statistical analyses, physical – mathematical analyses, extrapolation and correlation methods.

The result of studies showed that in the study area a tendency of frequency increase of the temperature and heat-providing is observed, as well as evaporation, dangerous meteorological phenomena. As a result, in the conditions of expected increase of temperature, grape cultivation vegetation begins earlier and ends later, that is, increases the duration of vegetation period. On one hand, favorable heat conditions are created for viticulture, on the other hand, the degree of viticulture vulnerability grows to meteorological and agrometeorological unfavorable phenomena and dangerous events.

Note, that in Ararat valley brandy wine material, fortified sweet, dry table wines and grape`s juice production have been specialized. Such climate change will lead to the sharp increase of sugar in grapes, which will not be appropriate to the standard requirements. In the result, in this zone it will be difficult and impossible to implement the industry of table dry wine materials. Cultivation of these varieties should be moved to the foothills.

On the other hand, it should be noted that the analyses of statistical service data shows, that not only the study area, but also the entire area of the Republic a growth of gross harvest and yield is observed during 2000-2015. But it does not means that viticulture is not vulnerable to impact of climate change.

So, this does not mean that viticulture is not vulnerable to the impacts of climate change. Thus, the combination of temperature, increase and precipitation decrease will bring to additional irrigation water demand, secondary soils salinization, reducing the effectiveness of grape, and therefore, to cost increase. So, it is necessary to make a serious scientific research, work out a new strategy, find new areas for vineyards and work out more new productive varieties for these conditions.