

Global warming and evaluation of agroecological conditions in Samegrelo - Zemo Svaneti region

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Due to the difficult relief conditions, Georgia is quite vulnerable to natural disasters caused by global climate change. With account of global climate change, unsustainable ecological conditions and the escalation of extreme natural or natural disasters require rapid and effective response. The agrarian sector is particularly vulnerable to these changes, as growth and productivity of agricultural crops are directly linked to climate change.

Samegrelo-Zemo Svaneti region in west Georgia is located on the south-eastern slope of the West Caucasioni. The humid subtropical climate in the region is spread from the Black Sea coastline to north-west, up to 500-600 m above sea level, mountainous climate dominates up to 1400-1500 m a.s.l. and high-mountainous climate dominates up to 2500 m a.s.l.

The results of our studies evidence the impact of global climate warming on Samegrelo-Zemo Svaneti humid subtropical, mountainous and high-mountainous regions of west Georgia. It is obviously responsible for the increased sums of active temperatures, prolonged vegetation period and decreased precipitation. As per the scenarios developed for global warming, a temperature increase will not have any significant negative impact on the agricultural crops provided it is not higher than the increase forecasted by the scenario. On the contrary, it may be beneficial to grow the crops at different altitudes from the sea level, by considering vertical zoning, where a 1°C temperature increase will make it possible to grow the crops 100-200 m higher as compared to the present zones.

Following the global warming, certain mitigation and adaptation measures against some negative events are recommended to use in the agrarian sector at present and in the future. Growing selective crops, which are resistant to higher temperatures. Besides, it is important to make terraces over the mountain and high-mountain slopes to reduce intense evaporation of water from soil; soil surface cultivation and loosening to reduce water evaporation from the soil is another efficient measure. Besides, efficient use of modern irrigation methods will be beneficial.