

Agriculture and Climate Change- Adapting Crops to Increased Uncertainty (AGRI 2015)

## Efficient use of water resources in agriculture

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### Abstract

Fresh water resources are the major natural resources of G eorgia. Despite of 810 000 m<sup>3</sup> of water produced annually per one km<sup>2</sup> of the country on the average, water supply of population at its Eastern part is an acute issue. Under more or less equal conditions in the Western and the Eastern parts of G eorgia with nearly the same population the annual fresh water volume per capita is nearly four times less in Eastern G eorgia. Moreover the annual runoff distribution per month for irrigation purposes is irregular here. The development of agriculture requires the proper use of land and water resources. This is especially true in dry and semi- dry regions, where due to the hard natural conditions the water is essential for harvesting.

The purpose of study was creation of geographical information system (GIS) of water resources. Kakheti region has been selected to carry out the research. Region is reach in fertile and pasture lands. It is the country's leading viticulture region. The major part of the population are engaged in agricultural activities. It is notable for its deficit of water resources in the country. Areas of non-irrigated land in the region is 90 385 ha. Water resources of the region are used irrationally. Depreciated and emergency state of irrigation schemes is the main headache of nearly all municipalities. Poor repair of network is a reason of high water losses. So the existing water consumptions problems hinder development of agriculture considerably.

Due to the global warming and progression of the process of desertification, will aggravate fresh water problem even more and presumably may lead to migration of local population from the area. To mitigate and adjust the above said processes is to proceed to the controlled water consumption with a view to use water resources more rationally.

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