



## **Using of environmental isotopes and hydrochemical application for assessment water resources of Karstic aquifer of the Grate Caucasus for an improved drinking water supply of Kakheti region**

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Main goal of the research is spatial and temporal distribution of environmental ( $^{18}\text{O}$  and  $^2\text{H}$ ) and geochemical (major ions and gases) tracers in karstic groundwaters, to setup their sustainable monitoring network on the territory of Kakheti and to use the data in the investigation of the karstic aquifer belt along the Southern slope of Great Caucasus for assessment of potential drinking water resources. The monitoring network of environmental tracers, mapping and monitoring data under the auspices of the International Atomic Energy Agency (IAEA) using for groundwater flow numerical modeling of Southern slope of Great Caucasus. The environmental tracer data coupled with numerical groundwater flow modeling provide conceptual and numerical models of groundwater recharge, origin and flow, estimate the groundwater age and renewal rate in these aquifers for potential water supply of the adjacent cities. Methodical recommendations to water resources management in Kakheti region will be elaborated on how to apply environmental tracers for assessment of water resources and evaluation of their vulnerability.