



Impact of Past Land Use Changes on Drinking Water Quantity and Quality in Ljubljana Aquifer

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Most of the practical problems that we face today with the on-site management of drinking water sources and distribution of healthy drinking water, originate from past actions, interventions and political decisions. In Ljubljana, the capital of the Republic of Slovenia, underlying groundwater is the main drinking water source. The main threat to drinking water sources is constant input of pollutant loads from roads, roofs, sewers, industry and agricultural areas.

The main problems are directly and indirectly related to the significant decrease of groundwater level and deterioration of groundwater quality observed in the last decades as an effect of land use practices under varying climate conditions.

The Vodovod-Kanalizacija Public Utility is responsible for water supply of the city residents as well as for management of the water supply system, its surveillance and maintenance. In the past, the Ljubljana Municipality was responsible for the protection of water resources and the first delineation of groundwater protection areas was issued in Decree in 1955. In 2004 a Decree on the water protection zones for the aquifer of Ljubljansko polje on the state level was issued and passed the competences of proclamation of the water protection zones to the state. Spatial planning is a domain of The Municipality and land use is limited according to water protection legislation.

For several observation wells long-time data sets about groundwater levels and quality are available, which enable us to analyse changes in groundwater quantity and quality parameters. From the data it is obvious that climate variations are affecting groundwater recharge. In addition, changing of land use affects groundwater quality.

In spite of the Decree on the water protection there is a heavy pressure of investors to change land use plans and regulations on protection zones, which causes every day problems in managing the drinking water source. Groundwater management in Ljubljana demands strong and effective co-operation between state, municipality, public water supply company and consumers.