



## **Drinking water source protection and spatial planning – how to deal with conflict of interests**

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Water resources are under increasing pressure, mainly due to land use and climate change. Groundwater, which represents the majority of drinking water in Ljubljana and Slovenia, is a hidden treasure, which has to be protected. This should be considered in spatial planning and land use.

Public drinking water supply in Ljubljana celebrated the honorable 127 years in May 2017. Location of the first well field in unconfined porous aquifer in 1890 was upstream of the city in the middle of agricultural land, since at that time agricultural activities were not recognized as threat to groundwater quality. Expansion of the city (industrial sites, roads construction etc.) and intensive vegetable production threaten groundwater quality, therefore already in 1955, the first municipal ordinance on the protection of drinking water was adopted with limitations of activities and land use in drinking water protection areas.

Due to the potential threats to existing drinking water sources, the Municipality of Ljubljana envisaged a reserve water source in the municipal spatial plan. Potential well field is located in the Landscape Park, but the wider recharge area is urbanized, crossed by the highway; agriculture is also present. Fortunately a 20 m thick overlaying clay layer acts as protective layer. The area is also a flooded area with inadequate drainage of surface waters coming from the hinterland. Most of these waters flow into urban sewers, which, can not take as much water in high waters. Measurements and scenarios of climate change show an increase in the frequency of more intense rainfall and the occurrence of floods in the future, which requires finding solutions and measures. Consistent management of land use, protection against floods and water resources is a necessary prerequisite for drinking water quality and life.

The protection of drinking water sources regarding land use management and flood protection is a challenge of balancing conflicts of land use pressures on water and adaptation to climate change issues despite uncertain scenarios. This challenge is studied in the PROLINE-CE project (Interreg CENTRAL EUROPE Programme), which aims to develop extended cooperation networks and knowledge exchange between partner regions, sector players and different decision makers on policy level to minimize still existing knowledge gaps concerning integrated water- and land-use management and improved effectiveness and sustainable use of capacities as well as efficient organisational structures of land use management and drinking water protection.

The aim of the PROLINE-CE project is to connect different stakeholders in the recharge area of the reserve water source in Ljubljana, enabling interacting cooperation and increased stakeholder involvement on horizontal and vertical level. Despite the fact that groundwater in the Ljubljana region is generally high quality drinking water source, individual activities in drinking water protection areas and, as a consequence, occasional pollution occurrences, point to the fact that in the future, interventions in the area have to be argued and controlled. Interest of ensuring healthy drinking water must be in the first place, while other interests must be adapted and subordinated to it.