



Emerging contaminants in water resources of Croatian karst - boDEREC-CE project

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Pertaining to the technological advancement of laboratory instruments and analytical methods, an array of questions regarding the occurrence and fate of anthropogenic substances referred to as “Emerging Contaminants” (EC), are brought to light. The term is used not only to describe new compounds, but also for those not perceived as having detrimental effects on the environment and human health. EC such as a wide spectrum of pharmaceuticals and personal care products (PPCP), enter the soil and water mainly through excretion, disposal of waste and wastewater, where they are found in generally low concentrations (ng/l to µg/l). Owing to knowledge gaps on persistency, ecotoxicity, transport and fate, majority of EC are currently not part of a routine surface water/groundwater monitoring programmes on EU level. Interreg Central Europe project boDEREC-CE (Board for Detection and Assessment of Pharmaceutical Drug Residues in Drinking Water – Capacity Building for Water Management in Central Europe) recognized this as an issue that should be addressed by strong transnational cooperation of renowned experts and relevant stakeholders. Thus, the project offers an opportunity for integrated management of waterworks, recommendations for the enhancement of current legislation on drinking and wastewater standards as well as technical solutions. Subsequently, through eight preselected pilot areas across Central Europe grouped in three clusters (groundwater extraction sites, surface water extraction sites, extraction sites in karstic areas), behaviour of EC, natural attenuation and removal efficacy of different treatment techniques will be thoroughly studied via jointly developed monitoring methodology and common project’s EC database.

Jadro and Žrnovnica springs catchment is selected as a Croatian pilot area. This typical Dinaric karstic catchment (250-500 km²), located in the middle part of southern Croatia, supplies with water city of Split and its wider surroundings. Hydrogeological field investigation will be conducted on spring and surface water for analyses of EC, stable isotopes and major ions, including *in situ* field measurements of physio-chemical parameters. The aim of pilot activities is to identify main EC from the group of PPCP, their behaviour and fate, but also to gain better insight into the complex hydrogeological properties of this karstic catchment, consequently helping to improve

protection of drinking water resources and thus human health. Monitoring data gathered through project activities will be an input for testing of models in three pilot cluster, which will help to develop an implementation strategy of a model-based decision making tool for EC called "modePROCON".

As HGI-CGS participates also in Horizon 2020 project GeoTwin focused on EC in karst groundwater, a chance for synergy building will enable experts to exchange experience and knowledge gained in the field of EC.