

GROUNDWATER QUALITY AND RISK PERCEPTION OF WATER USERS IN Cr(VI) AFFECTED AREAS OF GREECE

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Hexavalent chromium impacted aquifers are a global environmental concern as consumption of Cr(VI) contaminated water potentially has widespread health implications. This study presents data collected during CrITERIA, an EU- ERANETMED project on water management of Cr(VI) impacted water bodies in the Mediterranean. One of the project's objectives is to enable participation of stakeholders in finding the most appropriate option for tackling the problem, by involving them in dialogue and support, during data collection and development of a water use demand driven management process.

Within this frame the Greek project team has performed 4 periodic groundwater sampling surveys and collected 157 groundwater samples during the wet and dry seasons of 2017 and 2018 from selected areas where the problem had previously been identified. Concentrations of Cr(VI) ranged from < 2 µg/L to 62 µg/L in drinking water samples and reached 131 µg/L in irrigation water. The origin of elevated Cr(VI) in water in most instances has been attributed to natural processes linked with the presence of Cr-bearing rocks in the aquifers. Feedback on water analysis results has been provided to stakeholders including water managers and users, aiming to build trust but also raise awareness on the Cr(VI) problem. Furthermore, a public survey based on questionnaires was utilised in order to understand and detect how the water users perceive the risk and value improvements in the quality of water, as well as how far they are ready to pay for environmental improvements. The involvement of water administrators from local authorities during the 2-year monitoring period of the project enabled to detect the challenges of translating policy implementation into outcomes on the ground.

Overall, the project provided integration and guidance on active involvement of stakeholders as well as capacity building on best practices for collection and analysis of water samples for Cr speciation. It also set the ground for informed decision-making and operational water management in the study areas.

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