

# Groundwater quality over the Tensift basin (Morocco)

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The Tensift basin is located in central Morocco and lies over a surface of 22.000 km<sup>2</sup> under an arid to semiarid climate. It compasses several plains, the major one is the Haouz plain with intensive agricultural and industrial activities, making the water resources potentially exposed to pollution risks, especially agriculture chemical inputs and waste water. To have an overview on the groundwater quality, samples were taken in the dry season of 2020 from the study area and analyzed for cations, anions, nitrate, and trace elements. By using various statistics, diagrams, and quality indices, the objective was to better understand the origin of chemical elements and to analyze the groundwater quality and suitability for drinking and irrigation uses.

The results showed that the dominant hydrochemical facies are bicarbonate-calcium and chloride-sodium. The sampled groundwater in the Tensift basin was found globally to be of good to permissible quality for drinking purposes and irrigation. However, in some groundwaters the concentration of Na<sup>+</sup>, Cl<sup>-</sup>, and SO<sub>4</sub><sup>2-</sup> was high. Nitrates sometime exceed the WHO standards, originating mainly from anthropogenic activities. In addition to quantitative overexploitation, indices of groundwater contamination do exist in Tensift basin and should be tackled for sustainable use of groundwater.