Vulnerability assessment of the Sers Quaternary Aquifer using the DRASTIC method in e regional climate change context

A Ben Romdhane, A. Hatira
[1] *Faculty of Sciences of Tunis (University of Tunis El Manar, TN)*
[2] *Faculty of Sciences of Tunis (University of Tunis El Manar, TN)*

Abstract

This study presents an assessment of a selected quaternary's groundwater vulnerability to pollution. The area is situated in Sers EL kef region. The approach used for the DRASTIC method is based on the characterization of several parameters. This provides an indication of the sensitivity of the groundwater resource to pollutants based on its physical proprieties. Moreover, the physicochemical parameters of the groundwater (pH, electric conductivity, temperature, nitrate, saltiness) have been evaluated to make a comparison between the results of the DRASTIC method and the current pollution status. The results show that the zones affected by high vulnerability are situated in the north and central part of the Sers Plain. Chemical analyses also reveal that these zones generally correspond to the sectors were nitrate content is the most elevated, with concentrations reaching 309 mg/l (NO_3^-). This shows that the DRASTIC method provides an accurate indication of the vulnerability of aquifers. The aim of this study is to sensitize the authorities and local population on the dangers of threatening groundwater in the medium and long term and to lead them to adopt strategies for better aquifer protection. In the same way, a vulnerability map of the aquifer is established in order to better manage the land.

Keywords—*vulnerability, DRASTIC, nitrates, groundwater*



Professional Biography

Abir is a junior expert for water, environment and sustainable development with extensive experience in environmental and water policy advice and management in Africa.
Abir holds a degree in geosciences engineering with a specialization in water engineering. Ms. Ben Romdhane obtained also a Ph.D. in Environmental Sciences from the University of Tunis El Manar. Her experience includes extensive interdisciplinary field research, multi-country, and multi-site research program management. She worked in the Sahara and Sahel Observatory (OSS) since July 2015 on a range of issues such as water management, Environmental assessment, climate finance, desertification, and SDGs. She has taught graduate courses on water resources. Her current research interests focus on water resources management and Climate change solutions.

Email Id: abirbenromdhane@yahoo.fr