

### **Session 7.03. - Groundwater demand and pollution: the links between water supply, on-site sanitation and agricultural practices**

Rural and peri-urban settings are increasingly marked by investments in decentralized water services by water users themselves, particularly in boreholes. However, on-site sanitation is very popular and there is a global increase in the use of N-fertilizer (synthetic nitrogenous fertilizers and organic manure) in agricultural areas, leading to increased nitrate leaching that can threaten groundwater quality. The increased dependence on groundwater for decentralized drinking water supplies and potential point and nonpoint-source contamination is cause for concern. After a detailed assessment of groundwater contaminant sources, promising technical solutions must be identified, including the infiltration of treated domestic waste waters and rainfall collection to recharge aquifers and reduce pollution. On the social, political and institutional side, there is also need for drilling professionalism and civic awareness, particularly regarding sanitary seals and environmental hazards.

This session draws together science and social science expertise. It brings together scientists studying different aspects: the main sources of pollution in rural and peri-urban areas, the findings of new solutions based on the management by the user of water and soil, and perspectives in prevention or mitigation of the impacts. In this context it also addresses the transfer function of the vadose zone and its depurator potential for well-known contaminants (e.g. nitrogen, carbon, metals), emerging micro-pollutants (pesticides, pharmaceuticals, endocrine disruptors), as well as bacteria. Furthermore, the user and water supply service provider perspectives will be examined. The session will question the extent to which stakeholders face localized and diffuse pollution, and how they can manage different uses of the soils and aquifers. At last, an opportunity is provided to account for the user's perception of decentralised devices and practices, as a way to improve public policies in water management. The authors of selected abstracts will be invited to submit an extended version for publication in a special issue of an international journal.

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