MEDSAL Project

Salinization of critical groundwater reserves in coastal Mediterranean areas: Identification, risk assessment and sustainable management with the use of integrated modeling and smart ICT tools.

Press Release

General information

A new international research project on groundwater salinization in the Mediterranean hasstarted on 1/9/2019 within the PRIMA program. This project of 1,390,000 € budget, with a duration of 36 months, is a   joint program to be undertaken in the frame of Euro-Mediterranean cooperation network of funding organizations from members of Mediterranean countries and associated states of the EU, with national funding.

The Soil Water Research Institute(SWRI) of the Hellenic Agricultural Organization coordinates the project that involves eight academic partners from seven countries.The consortium covers a wide range of academic experts in various scientific fields (e.g. hydrogeology, hydrogeochemistry, environmental isotopes, modelling, hydro-informatics, geostatistics, machine learning) and is consisted of theSoil and Water Resources Institute of the Hellenic Agricultural Organization (Greece); Center for Research and Technology, Information Technologies Institute (Greece); Mobilization and Water Resources Management Laboratory - Batna 2 University (Algeria); Technische Hochschule Lübeck / Architecture & Civil Engineering, Laboratory for Hydrology and International Water Management (Germany); Cyprus University of Technology, Department of Civil engineering and Geomatics (Cyprus); Polytechnic University of Bari, DICATECh Dept (Italy); Sciences Faculty of Tunis, Department of Geology (Tunisia); and Mersin University, Faculty of Engineering (Turkey).

Principal objectives

MEDSAL Project aims to secure availability and quality of groundwater reserves in Mediterranean coastal areas, which are amongst the most vulnerable regions in the world to water scarcity and quality degradation. Its outcomes are expected to have significant impact on water resources availability and quality by improving the identification and definition of adequate strategies and measures for the protection and management of salinization in coastal aquifers. MEDSAL is expected to deliver new tools for the identification of complex salinization sources and processes, and develop new proxies for monitoring, assessment and forecasting of groundwater salinization in areas with scarce data and/or limited financial and human resources. These outcomes will be reached by a better integration of hydrogeochemical and environmental isotope data with physical-based groundwater flow and transport models and advance geostatistics. Artificial intelligence and deep learning methods will be also used to improve detection of patterns in multi-dimensional hydrogeochemical and isotope data. The MEDSAL team will elaborate tailor-made risk assessment and management plans by coupling salinization forecasts with climate change impacts and future scenarios. A major outcome of the project will be todevelop a public domain web-GIS Observatory for monitoring, alerting, decision support and management of coastal groundwater reserves around Mediterranean.

Further information and updates on the project may be found on its official website (www.medsal.net) and social media accounts on Facebookand Twitter (@MEDSALProject).