

Laboratory of Radio-Analysis and Environment

Laboratory of Radio-Analysis and Environment (LRAE) of National School of Engineers in Sfax (ENIS) in Tunisia was created in 1999 (since 1994 to 1999 was Research Unit "*Isotope Geochemistry and Paleoclimatology*") within the framework of the reorganization of research activities carried out by the Ministry of Research and Higher Education of Tunisia. The LRAE consists of approximately 45 members: teachers, researchers, engineers and technicians. The main research axes developed are multidisciplinary and regroup different specialties. The main research program of the LRAE is included in the problematic of the sustainable developing of water resources management in Tunisia. Indeed, our country is known by a scarcity of waters resources but also by a management strategy that avoid us water deficit. This strategy is essentially based on a balance between present recharge and exploitation of these resources.

Since the beginning, research activities at LRAE have been focused on supporting sustainable and Integrated Resources Management (IWRM) through surface and groundwater characterization in Tunisia and evaluation of aquifer's vulnerability to natural and human induced contaminants.

LRAE works in close contact with national and international institutions, including the Agricultural Ministry of Tunisia, the National Centre for Nuclear Sciences and Technologies of Tunisia (CNSTN), the National Society for Domestic Water Exploitation and Distribution (SONEDE, Tunisia), the National office of Sanitation (ONAS, Tunisia), etc., the Institute of Research and Development (IRD, France), Hydrology Institute of GSF of Munich (Germany), the Autonomous University of Barcelona (Spain), University Paris-South (France), Ca' Foscari University of Venice (Italy), and ISO4 private laboratory in Turin (Italy) and important cooperation with the International Atomic Energy Agency in Vienna...etc.

Among other international collaborations, LRAE is currently involved in the G@GPS (Groundwater@GlobalPaleoclimate Signals) international project, partially financed by International Geoscience Programme, International Union for Quaternary Research and UNESCO-IHP, and for which the LRAE is one of the project leaders. G@GPS, recently established to interpret links between palaeoclimate archives and palaeogroundwater observations at continental and intercontinental scales.

Since 2009 and after audited operation the LRAE have been selected as Regional Designated Centre (RDC, under AFRA projects) to play a leading role in AFRA and TC-IAEA projects as well as in the application of isotope techniques in water resource studies and management.

As RDC the LRAE is providing analytical support, together with several other institutions and particularly the IAEA, and is organizing meeting and training courses on water balance studies of large aquifers, techniques of groundwater dating, stable isotopes and the calculation of recharge, sampling and analysis, and modelling approaches.

In 2011 LRAE also took part at the IAEA-Isotope Hydrology Laboratory (4th inter laboratory comparison exercise for laboratories engaged in routine analysis of hydrogen and oxygen stable isotope composition of water samples) highlighting the strong involvement of the laboratory in international activities.