

Meeting the challenges of water resource management in Iraq

The challenge...

Following a long period of dry weather that engulfed the entire Middle East and reduced fresh surface water, Iraq is suffering a drastic water shortage. New techniques to determine the quantity, quality and depth of groundwater available in the country are necessary to support sustainability in water resource management. Environmental isotope techniques and the development of an environmental isotopes laboratory was considered an effective way to contribute to best water management practices in Iraq.

The project...

With the support of several IAEA technical cooperation projects, Iraq was able to establish the country's first environmental isotopes laboratory, with the capacity to measure both stable and radioactive environmental isotopes, and to assist in monitoring and managing water resources.

Know-how and expertise was transferred to Iraq through expert visits, the training of fellows and the transfer of methodologies to the Iraqi project team. Iraqi scientists were trained to carry out field and laboratory measurements in isotope hydrology at the IAEA isotopes hydrology laboratory and at the laboratory of the Water Authority of Jordan. In addition, the IAEA provided Iraq with laboratory and field instruments.



Water sample preparation in the new laboratory.



Field sampling for C-14 measurements.

The impact...

As a result of IAEA support, the isotope hydrology laboratory at Iraq's Ministry of Science and Technology (Environment and Water Directorate), is now capable of providing the support required by the national programme for the assessment and management of water resources. The laboratory has started to perform stable isotope analysis of samples for the Ministry of Water Resources, facilitating the study of water-related problems in Iraq.

The laboratory is also able to provide training to graduate students, supporting their research by providing water sample analysis services using stable isotopes.

In addition, staff who were trained through the project are now training staff from other Ministries.