

# **BUILDING AN IMPROVED KNOWLEDGE BASE FOR INCREASED AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER RESOURCES**

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**ABSTRACT:** Sustainable management of water resources lies at the intersection of the most diverse aspects of human life and organization. These include social, political, financial, and geographical factors, as well as scientific knowledge. A lack of adequate scientific information and knowledge on water resources has been recognized since the 1977 United Nations Water Conference in Mar del Plata, but significant gaps continue to exist in resource assessments, and the problem is particularly acute with respect to groundwater resources even though groundwater provides more than half of freshwater used worldwide. Fundamental aspects of aquifer hydrogeology, including recharge, groundwater-surface water interactions, and the extent and distribution of fossil groundwater remain poorly characterized. Aquifer assessments at regional or national scales can be conducted more effectively and rapidly by using groundwater isotope signatures and ages. In this presentation, I will discuss some of the contributions of IAEA in isotope hydrology and results from field applications in Asia, Africa and Latin America. I will also discuss recent IAEA initiatives for a wider application of isotope techniques for groundwater dating and to increase the availability of comprehensive, national assessments of water resources.