IAEA

Water Resources Programme

What can we learn from rain and moisture?

The GNIP database currently includes nearly 90 000 records from 700 stations located in 101 countries.

The ultimate source of our water resources is air moisture, which condenses to produce rainfall and snow. Knowledge of the isotopic composition of precipitation is essential for the practice of isotope hydrology.

The IAEA coordinates a Global Network of Isotopes in Precipitation (GNIP), which is used to identify the source areas of surface water catchments and groundwater reservoirs. It is also used to help predict changes in rainfall patterns due to climate change. An initiative "Moisture Isotopes in the Biosphere and the Atmosphere" (MIBA), was launched in 2005 to monitor the isotope composition of moisture in plants, soils and air. This effort will provide an understanding of how soil moisture availability and atmospheric humidity affect precipitation patterns under changing climatic conditions.