

EGU23-13827, updated on 17 Jul 2023

<https://doi.org/10.5194/egusphere-egu23-13827>

EGU General Assembly 2023

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Power of groundwater data sharing in the Mediterranean region

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Groundwater is a strategic water resource in water-stressed regions such as the Mediterranean region. It used to meet the increasing domestic water demand and food production, maintaining ecosystem integrity and buffering climate change impacts. However, groundwater information that relies mainly on in-situ data observations remains fragmented and lacking standardization in the Mediterranean region due to the lack of systematic monitoring and data-sharing policy. PRIMA Foundation, launched in 2018 as a European Commission funding program, has targeted groundwater as a priority topic in its two first calls of 2018 and 2019. Sustain-COAST and InTheMED are two PRIMA-funded projects aiming for sustainable groundwater management in the Mediterranean region, adopting innovative but complementary approaches. Among their specific goals, Sustain-COAST and InTheMED projects have jointly developed a joint effort to collect groundwater-level data from around the Mediterranean. Over 14,000 time series of historical groundwater level data have been collected from different countries and have been harmonized into a common format. The resulting groundwater database has opened new horizons and perspectives for groundwater assessment that were previously invisible. In this contribution, we present and explore five new directions that have resulted from the groundwater database of the Mediterranean region: 1. Trend analysis and groundwater patterns clustering and their controlling drivers, 2. Regional groundwater level estimates combining different global groundwater models and regional in-situ data, 3. A methodological framework using Gravity Recovery and Climate Experiment (GRACE) satellite data to retrieve groundwater storage changes, 4. Water policy timeline, harmonization and pathways for innovative governance, and 5. Lesson learned from “success stories” of groundwater trend reversal and their transfer capabilities. This contribution will shed light on the power of data-sharing and will call for future systemic groundwater data collection in the Mediterranean region and beyond.