



IAHS2022-419, updated on 04 Feb 2023

<https://doi.org/10.5194/iahs2022-419>

IAHS-AISH Scientific Assembly 2022

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Inclusive and resilient groundwater assessment towards sustainable development in the Mediterranean region

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The Mediterranean region is experiencing rapid population growth, increasing water demand, and faster climate warming. Groundwater plays a central role in the development of the Mediterranean by ensuring food security, buffering climate changes impacts and maintaining socio-economic stability and ecosystems integrity. However, despite groundwater being recognised as a powerful catalyser against climate- and human-induced effects, its status remains unknown, and its budget is uncertain. Moreover, the lack of appropriate groundwater monitoring programs at a regional scale, data sharing policy, and fragmented water policy and governance have complicated this vital resource's sustainable utilisation and protection.

To this end, an international and multidisciplinary team of scientists with complementary skills have joined efforts through two PRIMA-funded projects (Sustain-COAST and InTheMED) towards better groundwater management and governance in the Mediterranean. In this respect, the Sustain-COAST Living Labs provide the setting to explore innovative governance approaches that could be scaled to increase resilience and adaptation capacity across the Mediterranean. At a regional scale, efforts target detailed water policy examination, pathways exploration towards the reinforcement of in-situ data collection, and groundwater modelling. Examination of water policy of the Mediterranean revealed an unbalanced situation between South Europe, characterised by complete, harmonised and straightforward water policy. Conversely, in North Africa and Middle East, water policy was found complex, not regionalised and fragmented in various initiatives. Results also showed the Mediterranean has become increasingly dependent on cereal importation over local food production, which poses a severe threat to its best diet overall and food security. Results suggested that combining in-situ data and regional groundwater modelling can offer further insights into this data-scarce region. Believing “that no one size fits all”, lessons learned from success stories, and tailored solutions to typical demonstration sites from both shores of the Mediterranean region are of extreme importance.

Acknowledgement: This work was supported by Sustain-COAST and InTheMED projects. Sustain-COAST was funded by the German Federal Ministry of Education and Research (BMBF, Germany, Grant 01DH19015) under the EU PRIMA 2018 programme. InTheMED is part of the PRIMA 2019 programme supported by the European Union's Horizon 2020 research and innovation programme under grant agreement No 1923.