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LIVRO DE RESUMOS

PROMOTING MANAGED AQUIFER RECHARGE IMPLEMENTATION IN THE MEDITERRANEAN AREA. THE AGREEMAR PROJECT AND EXPECTED OUTPUTS

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ABSTRACT

Managed aquifer recharge (MAR), also referred to as artificial recharge, is a nature-inspired solution that aims at intentionally augmenting the recharge of aquifers by making use of both conventional (surface water) and unconventional (e.g. treated wastewater) for later recovery or environmental uses. This is already a common practice in several countries, which have demonstrated that MAR can be a complementary tool to improve and support water resources management (WRM) strategies.

The potential for MAR in Portugal was demonstrated by several research projects (GABARDINE, MARSOL, MARSoluT) but the integration of MAR with other WRM practices has yet to gain traction. Recently, two resolutions from the Portuguese parliament, #86/2022 and #87/2022 published on December 26th, recommended to the Government to “encourage the development of projects and initiatives that contribute to the operationalization of the artificial recharge of aquifers, as a complementary solution for the management of water resources in the face of the worsening drought scenarios, duly evaluating all environmental impacts” and to “articulate with local authorities the application of new measures and commitments to increase the use of treated wastewater, for urban hygiene purposes, watering green spaces, or others that are understood to be useful and beneficial”.

The newly started AgreeMAR project responds to this call by promoting the use of MAR in the Mediterranean area through the development of a general participatory governance framework, followed by the implementation of co-created, location-specific agreements for MAR benefits sharing which are endorsed by cross-sectoral stakeholder groups. This will be supported by the development of a methodology for the selection of feasible locations for MAR application based on the integration of demand for groundwater-dependent services, conventional and non-conventional water sources, and intrinsic hydrogeological conditions, relying heavily upon fostering the engagement of stakeholders from different societal sectors and actor groups in all stages of project development. For this, an extensive questionnaire has been developed and responded by different institutions (cf. <https://forms.gle/LK4c2Yieh2a2QAI6>). The applicability of AgreeMAR governance framework will be demonstrated at island, regional and local scale on four case study regions from Tunisia, Cyprus, Portugal, and Spain. The AgreeMAR project – “Adaptive agreements on benefits sharing for managed aquifer recharge in the Mediterranean region” (<https://agreemar.inowas.com/>) is funded for three years (June 2022 – May 2025)

by the national research agencies under the Partnership for Research and Innovation in the Mediterranean Area (PRIMA) and coordinated by the Research Group INOWAS at TU Dresden, Germany.

To this stage, the project team has compiled the main hydrogeological, geochemical, biophysical, environmental, social, and economic feasibility criteria for MAR (<https://agreemar.inowas.com/feasibility-criteria/>) while, by interacting with the most representative stakeholders from all demo regions, is now working on assessing the degree of importance of each criterion within several societal sectors that may benefit from the implementation of MAR. The next step, based on the feedback collected from stakeholders and experts, is to assemble and validate specific geospatial feasibility maps which will ultimately support the decision-making process within the scope of the MAR agreements.

The main aspects and developments of the project will be presented, possibly focusing on the feasibility maps application and the questionnaire responses.

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