

DISCOVER GOTHAM

The GOTHAM project will develop an innovative tool for groundwater management

GOTHAM stands for "Governance tool for sustainable water resources allocation in the Mediterranean through stakeholder's collaboration". It aims at **shifting the paradigm in groundwater management by engaging end-users**. The project is led by Cetaqua and gathers seven partners from the Mediterranean area including private companies (GAC Group, Ingegneria Informatica), a university (Universidad de Córdoba), an international NGO (Istituto per la Cooperazione Universitaria), and public institutions (Ministry of Agriculture in Lebanon and The National Agricultural Research Center in Jordan). Together, they aim at **co-creating a user-driven tool** that enables **effective governance for the preservation of the quantity and quality of groundwater** in the Mediterranean basin. The project is funded by the European Commission under the PRIMA (Partnership for Research and Innovation in the Mediterranean Area) programme and started on the 1st of April 2020.

The Mediterranean basin has been identified as one of the world's basins being the most at risk due to climate and anthropogenic changes. The population growth of the Mediterranean basin as well as the always growing water demand (through the strong urban expansion, the development of tourism resorts, the increased irrigation of crops, etc.) and the unappropriated distribution of resources has led some Mediterranean rims (in particular the eastern and southern rims) to face water stress and/or water scarcity.

To overcome this water stress, GOTHAM has decided to tackle the issues regarding **the current groundwater governance models**. In fact, a lot of knowledge is generated at each decision-making level but few exchanges between those levels are taking place. This lack of transparency is creating doubts, uncertainty and mistrust which consequently leads to conflicts.



Therefore, there is a need for a **tool capable of allowing data exchange** between the different stakeholders and water users and for integrating this highly valuable **information in groundwater governance decisions-making**.

The GOTHAM project aims at providing such a tool, the **GTool**. The GTool is an innovative groundwater governance tool that is going to be **co-designed by all water stakeholders** (regulators, end-water users, water producers and suppliers). It will allow for a **new groundwater management framework** based on users (bottom-up approach) instead of the current top-to-down model in which the regulator establishes the enforcing rules on a (almost) single basis. This is considered to be the only way to reach a **long-term sustainable management of aquifers** tackling their complexity in terms of uncertainty (regarding resources, reservoirs or internal geometry, etc.) and of surveillance and control by administrations.

To design the tool, the GOTHAM team will use a co-creation process. **Three pilot cases** have been designated: Campo de Dalías in Spain, Iaat Baalbeck-Hermel in Lebanon and Azraq Basin-Zarqa in Jordan. Moreover, the tool will be implemented in these areas for enabling users' feedback. These three use cases have been chosen because of the different types of challenges they aim to overcome through the GOTHAM project:



Campo De Dalías in Spain

Known as the "Plastic Sea", this peninsula hosts intensive agriculture in Spain, under green houses. Intensive pumping of groundwater has led to changes in the behavior of aquifers and to their deterioration and in the overall quality of water. Moreover, the excessive agriculture on this site has led to a heavy pollution of the water due to their use of salts, nitrates, fertilizers, and phytosanitary substances.



Iaat Baalbeck-Hermel in Lebanon

The excessive underground water pumping has engendered a decline in the water table level. As a consequence, the springs dry out which results in disappearances of the natural sites. Moreover, there are issues related to pollution: leaks of polluted water in the southern water basin coming from waste-water treatment plants and an increased pollution ratio in underground water.



Azraq Basin-Zarqa in Jordan

In this area, there is a mismanagement of the groundwater due to the lack of control of the government regarding water use and due to the illegal drilling of water by private users. This results in a deterioration of water quality and quantity.

To learn more about the project, please visit our website: www.gotham-prima.eu

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