

# GOTHAM: co-creation to advance the sustainable management of water resources

The first GOTHAM co-creation workshops were organised in Spain, Lebanon and Jordan in July and August 2021. These workshops took place as part of the community engagement strategy of the GOTHAM project. Participants were offered the opportunity to participate in the co-creation of the GTool, the main output of GOTHAM, to ensure that it matches their needs, that it is adapted to the local reality and to guarantee the sustainable use of the tool. The stakeholders' feedbacks and inputs collected during the workshops aimed at preparing the GTool specifications. Workshops were also an opportunity to deliver information about the GOTHAM project to local stakeholders.

The main concern of the project team during the various sessions of the workshop was to create trust amongst all participants through a detailed and clear explanation of both the GOTHAM project and the objectives of the co-creation workshop in order to prevent any misleading or exaggerated expectations. Have the right to express equally, consider all the ideas and opinions and give equal opportunities were prevalent from the start of the workshop until its conclusion. This atmosphere prevailed, and ensured that participants contributed effectively, shared information and carried out all the duties that were asked.

The workshops were based around four main pillars: needs, user interaction, system functionality and adoption. The workshops in Jordan and Lebanon were constructed in

two parts. During the first part, stakeholders (e.g. end-users, water producers, regulators, etc.) were separated to better understand their needs as a group. The discussion sessions were organised around 3 topics:

- Current situation: How could groundwater be better preserved?
- System functionality: Information needed
- User interaction: How can people use the GTool at best?

The second part was a plenary session which helped to build consensus between all the stakeholders. During the plenary session, each stakeholder group presented their results to the audience. This generated discussions between stakeholders who exchanged point of view upon the use and purpose of the application. In Spain, the format of the co-creation workshop was somewhat different from the two other workshops, as the focus of the workshop was on a questionnaire developed by Cetaqua due to different needs in Spain compared to the other case studies.

For each workshop, the GOTHAM team developed a rich set of questions, to help collect information for the programming of the GTool. They served as support for the moderators and were adapted in each workshop.

Learn more about each workshop below.



## Spain

The Spanish co-creation workshop was organised and implemented by Cetaqua in collaboration with the project partner G.A.C. Group and JCUAPA, the groundwater user association in Campo de Dalías (the Spanish case study) and the water operator Hidralia. Campo de Dalías is an area of intensive agricultural production which is mainly irrigated with groundwater. Intensive pumping of groundwater has led to changes in the quantitative status of aquifers and to their quality deterioration.



This co-creation workshop was organised with the main groundwater stakeholders in Campo de Dalías. Four types of stakeholders involved in the groundwater cycle were identified, mapped and invited. Water producer, wastewater

utility, end-water users and the main irrigation community were gathered during the workshop and discussed the future specifications of the GTool. It gathered a total of 28 participants. The majority of them were farmers together with representatives of Irrigation Communities. Participants have been assigned in three different stakeholder groups: (1) farmers, (2) scientific community and (3) water producers.

The workshop started with a welcome speech and a presentation about Cetaqua activities in Spain, done by Enrique Gutiérrez, manager of Cetaqua Andalucía. He focused on the water stress situation that most of the Mediterranean Spanish coast periodically suffers because of lower and more irregular precipitation and an increase in water demand, especially regarding groundwater. This situation worsens in areas such as Campo de Dalías, where aquifer recharge is conditioned by the low mean annual precipitation (200–300 mm/year). Under this



context, it is necessary new and innovative groundwater management tools aiming at supplying necessary resources to all water needs while assuring the good chemical and quantitative status of groundwater.

## Lebanon

In laa – Baalbeck–Hermel region – 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. In addition to the increasing demand for water in Lebanon and the reduction in the supply. So, the absence of a good water management will worsen the crisis. In addition, the water used for agriculture represents more than 60% of the total water used. Therefore, any future drought crisis will primarily affect this sector. It is in the context of this particular use case that the Lebanese workshop took place.

The first co-creation workshop around the Lebanese case study was implemented by ICU with the support of the Municipality of laa and under the patronage of Baalbeck–Hermel governor. It involved 22 participants and 2 ICU staff. Participants have been dispatched in three stakeholder groups: (1) farmers and urban users, (2) water producers and (3) regulators, organisations and experts.



The introduction session started with a welcome speech and presentation of GOTHAM project done by Hussein Hoteit, ICU project manager in Lebanon. In addition, the representative of Baalbeck–Hermel Governor and the mayor of laa Mr. Hussein Abdel-Sater delivered valuable welcome speeches describing the local situation.

The results of the workshop show that the stakeholders need different information in different manners. This indicates that the GTool should not be a one-size-fit-all solution, but instead a tool that can be parameter depending on the needs of each stakeholder

Mayor of laa Municipality concluded the workshop by announcing that he aspires to transform this Community of Practice to a formal Water Users Association, after the new water law became effective and that allowed the establishment of such association in Lebanon.

## Jordan

The GOTHAM team at NARC conducted the workshop in Azraq with the help of the socioeconomic directorate. The workshop took place as part of the Azraq Basin-Zarqa use case: this particular region of Jordan suffers from 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.



Three types of stakeholders involved in the groundwater cycle have been identified and invited: water regulators, NGOs, and end-users (farmers and household). Together they discussed water challenges and obstacles. A total of 45 participants took part of the workshop, they were then divided into three stakeholder groups: (1) farmers, (2) household and (3) policy makers. The Azraq Bason-Zarqa area mostly practices small-scale farming, which explains the wide participation of farmers and households.

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Dr Luna Al Hadidi started the workshop with a presentation of the GOTHAM project, project objectives, the expected impacts, the case study, and the G tool specificities. Then, Eng. Thair El Momani focused on the problems related to the water scarcity, in addition to the increasing demand for water and the reduction in the supply.



One of the main results of the workshop is that all stakeholders mostly agree on the ground water situation: lack of water availability, anarchic management of prices, reduction of water quality as the groundwater depletes, as well as a conflictual management of the resource. However, each stakeholder group have widely different need from the GTool. These needs however are not necessarily contradictory. They all are imagined improving water management from their point of view.

Stay tuned on the project website and social media accounts to have more information on the use cases' outcomes!

[www.gotham-prima.eu](http://www.gotham-prima.eu)



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