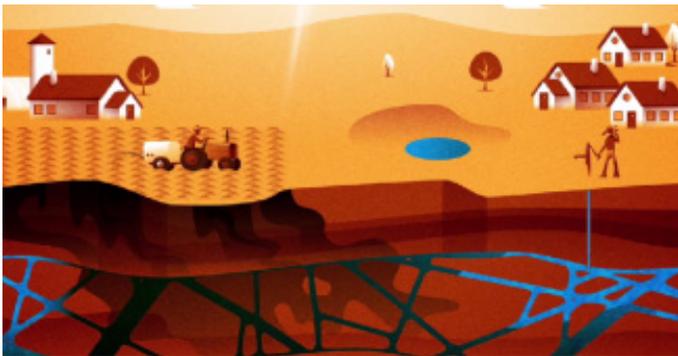


THE GROUNDWATER GAME

A Serious Game on Improving Groundwater Management Through Cooperation and Collective Action

CONTEXT

In this computer simulation you are part of a small rural community of farmers who irrigate their land using groundwater. During the game farmers' goal is to maximize the production of their crops. But as the game evolves, groundwater level is expected to drawdown which results in environmental consequences directly affecting the community and the players.



Farmers will have to take measures to manage the common resource, get the best profit out of their crops and protect the environment and the community.

TARGET AUDIENCE

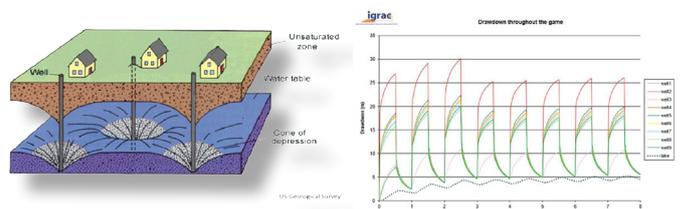
Water end-users, students, water authorities, water professionals, early career hydrogeologists, water sociologists and economists, NGOs, UN Agencies, WASH experts.



LEARNING OBJECTIVES

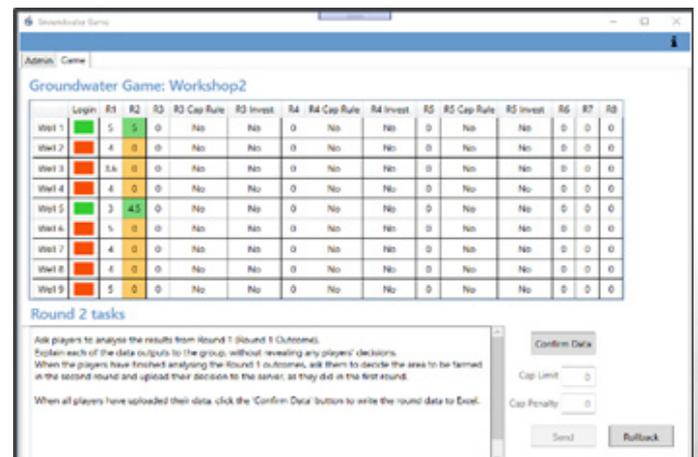
This serious game addresses the social dilemma of the tragedy of the commons in groundwater abstraction. The main objectives of the game are to:

1. improve the participants' understanding of the functioning of groundwater systems and introduce technical concepts;
2. foster a deeper appreciation of the collective action choices and challenges for regulating groundwater use by influencing policies and management practices; and
3. open up a discussion on the challenges of sustainable and equitable groundwater resources management.



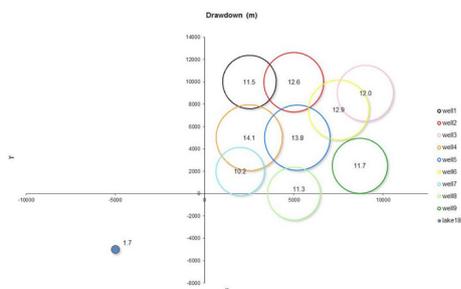
THE GAME

The Groundwater Game is an excel calculations spreadsheet-based simulation managed through an app and supported with a Power Point presentation.



SETTING THE GAME

- To play the game one need: a computer with Microsoft Office installed, a projector and ideally a router.
- The game is facilitated by one or more facilitators, acquainted with the game rules and hydrogeological terms.
- Ideally, players should have an android smartphone or a laptop per team/player. .
- Number of players: 9 – 30 (distributed by 9 teams)
- Duration: 120 min, including a 30-minute debriefing.

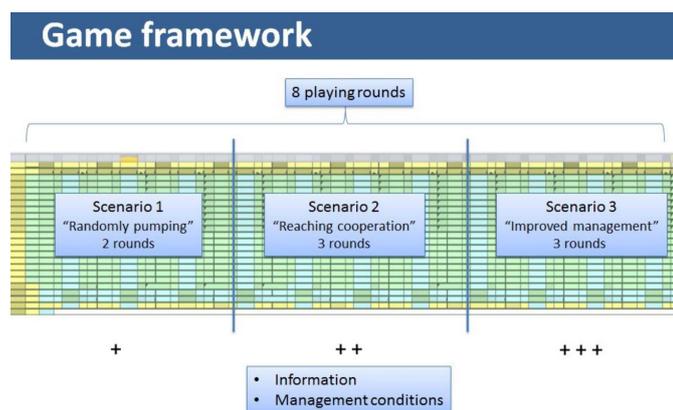


RULES AND SCENARIOS

The game consists of three different Groundwater Management Scenarios divided into eight playing rounds:

- Scenario 1 (Randomly pumping) - 2 rounds
- Scenario 2 (Reaching Cooperation) - 3 rounds
- Scenario 3 (Advanced Management) - 3 rounds

In all rounds, players have to decide on the area to crop and therefore irrigate with groundwater. In between scenarios players will have the opportunity to change their strategy by adding new features such as investment in more efficient irrigation equipment and organize together and limit groundwater abstraction among players.



The Groundwater Game has been made available under the following creative commons license:

Attribution-NonCommercial-ShareAlike 3.0 Unported (CC BY-NC-SA 3.0)

Read the full legal code here: <https://creativecommons.org/licenses/by-nc-sa/3.0/legalcode>

COLLABORATION AND PARTNERSHIPS

The first version of the Groundwater Game was developed in 2008, and later updated/improved a few times. The game was extensively used within the framework of the GroFutures project, led by the University College London (UCL). Feedback from these game sessions in Ethiopia, Tanzania and Niger have been used to further improve the game, adding new content and improving the interface. The latter was done by the Institute of Development Studies (IDS), a partner in the GroFutures project, by developing an app that significantly boosted/reinforced the game dynamics.



INTERESTED?

If you are interested in including the groundwater game in a project, workshop, training programme, conference or class, please contact IGRAC: info@un-igrac.org.



International Groundwater Resources Assessment Centre

www.un-igrac.org
info@un-igrac.org
 +31 (0)15 737 0196

