



Tropentag, September 15-17, 2021, hybrid conference

“Towards shifting paradigms in agriculture
for a healthy and sustainable future”

Experiential Learning: Groundwater Games and Collective Action in Ethiopia

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Abstract

Groundwater management is highly complex, with declines not directly visible and many users sharing the same resource and not realising their interconnectedness. Behavioural games that simulate real-life common-pool resource use have shown promise as a social learning tool for improving resource governance. This study adapts and implements a groundwater governance game, originally developed for India (Meinzen-Dick et al. 2018), in Ethiopia, to assess the potential of using game intervention to help raise awareness of groundwater depletion and improve understanding of the importance of collective governance. In each game round, players make individual choices on cultivating a water intensive or water saving crop and see the effect of their collective decisions on the water table. In 15 treatment villages surrounding the Meki River catchment, the game was played with groups of five men and five women separately. Participant surveys were conducted before and after the game to capture individual mental models regarding groundwater use and management, as well as any immediate learning effects. A community-wide debriefing discussion was held in each village after the game to reflect on the process and lessons learned, and stimulate discussions about groundwater governance. The findings indicate a clear learning effect for participants who played the games in terms of understanding of groundwater dynamics, the joint effect of diverse water uses and users, and the importance of collective resource governance. Data from the games also shows group-level resource management evolves between the no communication, communication, and rule-making rounds of the game, with gendered differences in decision-making. We discuss the creative ways in which players communicate to manage groundwater in the game, including applying crop rotation, quota rules, monitoring and sanctioning. Unlike other places where competition over groundwater and over-extraction has reached critical levels, small-scale groundwater irrigation in Ethiopia is still at a young stage of uptake and is simultaneously being promoted as a means of livelihood security for farmers. Game interventions in the context of Ethiopia thus presents a unique opportunity to ‘plant the seeds’, i.e., influence

learning and collective action that can help prevent groundwater depletion in the future before reaching a water crisis situation.

Keywords: Behavioural Games, commons, Ethiopia, Governance, Groundwater