SCALING UP EXPERIENTIAL LEARNING TOOLS PROJECT NOTE 4 DECEMBER 2024

Integrating surface water games into community water management toolkits: A reflection from practitioners in Odisha, India

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1. Introduction

Water is a vital resource for agricultural production, sustaining ecosystem services, and supporting livelihoods of communities. However, population growth and climate change coupled with unsustainable water use and management are increasingly pushing the limits of water resources. In many parts of India, water scarcity is already posing a threat to agricultural systems and livelihoods due to prolonged droughts and climate variability. Water scarcity is more pronounced in semi-arid and arid dryland regions of India, where the majority of these regions are characterized as high to extreme water stress areas. Effective management and governance of water resources is crucial to sustain productivity of dryland agricultural systems and livelihoods in these regions.

Recognizing the importance of water for development, India has long prioritized participatory watershed management as a central approach for sustainable water management in its dryland areas. The premise is that participatory development approaches can help shifting local communities from being passively affected by external interventions to actors that actively participate in designing locally-adapted effective coordination tools and community rules to motivate and sustain desired changes in water users' behaviors. Yet, water management is highly complex, as it requires coordinating among many users and balancing diverse needs, including irrigation, domestic use, water for livestock, non-agricultural purposes, and ecological sustainability. A key aspect of this challenge is that water users often interact in ways that create unintended consequences for one another and ultimately for their common water resources.

Notably, effective management of water resources demands coordination among users and stakeholders not only for governing the equitable use of water but also ensuring provisions for maintaining relevant water infrastructures. Collective action games can play a critical role in helping water users appreciate the complexity in water management and foster coordination among themselves to effectively manage their water resources. In the context of India, the Foundation for Ecological Security (FES), the International Food Policy Research Institute (IFPRI), and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) developed and piloted different water management games. Different studies provided evidence that the games increased the likelihood of communities creating or adopting water governance mechanisms and changing behavior such as community-based water infrastructure maintenance. Based on these findings, the partners developed a scaling strategy where government, civil society and private sector partners were exposed to the tools and field staff trained in their implementation. From 2020 to 2023, FES and ICRISAT trained in total 5239 women and 4043 men in the facilitation of the experiential learning approaches. This created the foundation for the partners to independently implement the games between 2020 and 2023 in 4802 communities.

In this Technical Note, we report on the experiences and observations of practitioners who were trained in facilitating the games and who gained hands-on experience in using the the Surface Water Game (SWG). The objective is to get insights into the effectiveness of integrating SWGs into community water management interventions to improve local governance for better water management. The feedback from practitioners allows us to learn whether the training indeed enabled them to use the tools, to learn from their experiences, and to improve the tools and the scaling strategy.

Data were collected from 110 practitioners in Odisha State, India using a Google form. The sample was quite gender balanced (Figure 1). The average age of respondents was about 35 years, with a median age of 34 years (Figure 2). All respondents had at least attended high school, with about 35% being university graduates and 12% postgraduates (Figure 3). The respondents represented different entities, with about 46%, 40% and 14%, respectively, coming from government, non-governmental organizations (NGOs) and private organizations (Figure 4).

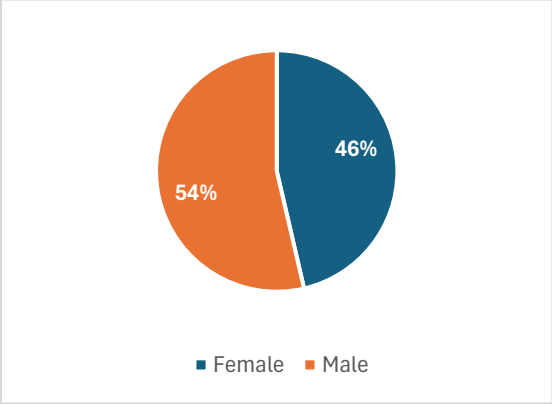

Figure 1. Respondents' gender

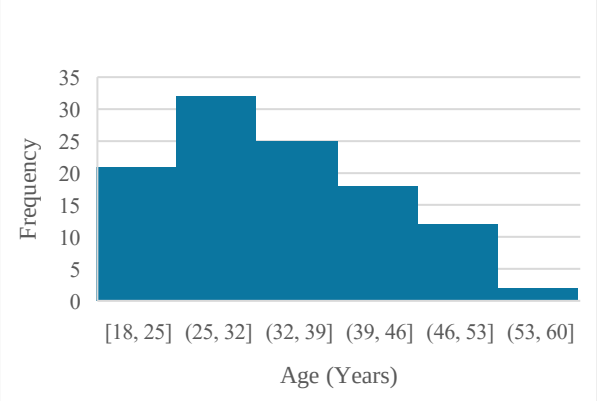

Figure 2. Respondents' ages in years

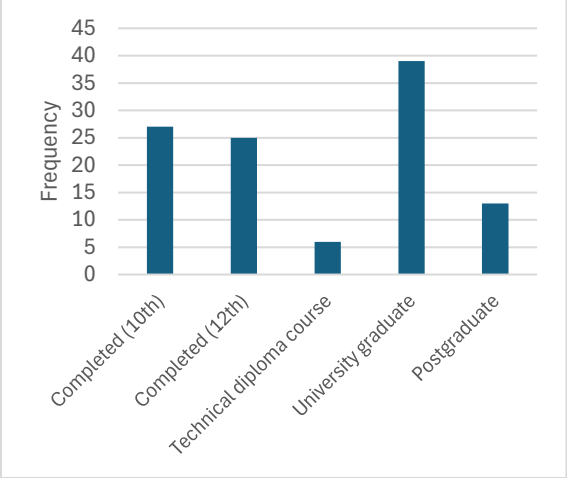

Figure 3. Respondents' education levels

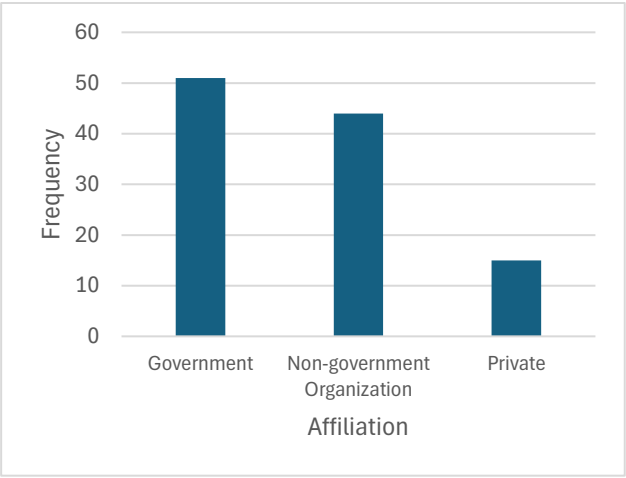

Figure 4. Respondents' institutional affiliations

2. The Surface Water Game (SWG) and its practical importance

The SWG is an innovative, participatory tool designed to enhance the capacity of development practitioners from government, NGOs or other facilitators to manage community surface water resources effectively. By simulating real-world challenges faced by local communities, it provides a structured and interactive platform that encourages dialogue, highlights the interconnectedness of various water users, deepens their understanding of water dynamics, and fosters social learning and collaboration among participants. Such understanding is expected to support implementing agents and water users to explore strategies for equitable water allocation, managing conflicts, and effective management of community surface waters through participatory and inclusive water governance practices. Through influencing understanding and norms, communities are encouraged to review existing water management rules, create new ones and make effort to monitor and enforce them. The combination of better understanding, norms, and rules then influences behavioral changes in terms of water provision (infrastructure maintenance), appropriation (equitable distribution of water) and developing institutional capacity for better water management (Figure 5). Eventually, these actions can lead to context-specific and sustainable water management and improvements of communities' livelihoods and resilience, strengthened agency of women and marginalized groups, and better provision of ecosystem services.

The SWG is mostly played with 7 farmers who live in communities benefiting from a dam or water harvesting structure. Participants are usually selected considering gender balance of the groups. Alternatively, the game can be played with representatives of Water User Associations, local leaders or community organizations. Players need to take two related decisions during game play: (i) jointly contributing to a water harvesting infrastructure that makes water available for all group members and (ii) water appropriation decisions framed as choices of crops with different water consumptive capacity considering water availability. Game play is followed with community debriefing that helps linking game outcomes and experience with real-life community management challenges to facilitate translating knowledge and insights into effective management rules.

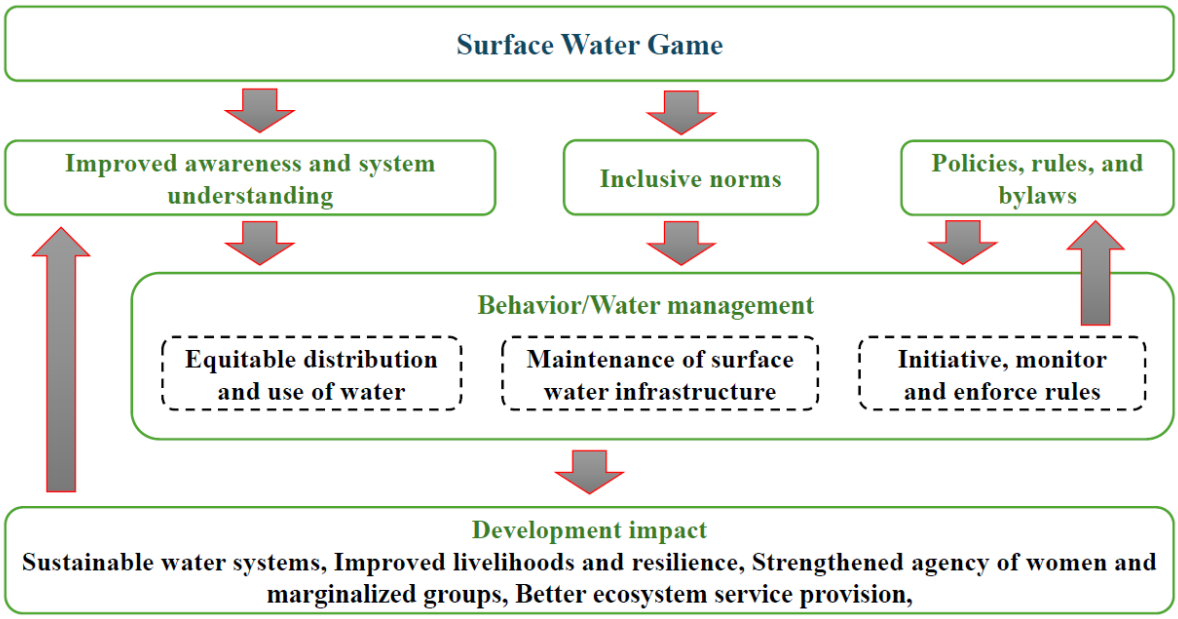

Figure 5. Impact pathways of the Surface Water Game

3. Integrating the surface water game into community water management tools

3.1. Building capacity of practitioners for using the surface water game

The practitioners had varying degrees of experience in the organizations where they were currently working: 71% of respondents had less than five years' experience, whereas 29% worked for 5-15 years in their current organizations. Effectively integrating tools like the SWG into traditional community water management toolkits is critically dependent on the motivation, knowledge, and capacity of practitioners to use these tools. Between 2020 And 2023, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Foundation for Ecological Security (FES) collaboratively trained development practitioners from government, NGOs and other facilitators on using the surface water game effectively as a tool to develop capacity of the local governance. The training programs included conceptual background deepening understanding of water as commons, facilitation for the game focusing on communicating processes, building trust, and fostering connections, and demonstration sessions in the field to experience the game, followed by debriefings focusing on collaboratively interpreting of game results and relating them to real-life community challenges. About 96% of the practitioners reported attending a training on the SWG. 72% and 18% of them, respectively, indicated taking the training one and two years ago, while 4 practitioners did not take any training on the SWG.

3.2. Community outreach and feedback

Practitioners managed to roll-out the SWG in their working sites. About 46% reported rolling-out of the SWG in less than 5 communities (i.e. villages), 35% reached 5 to 15 communities through the SWG; and 17% of the practitioners used SWG in discussions in more than 15 communities (Figure 6).

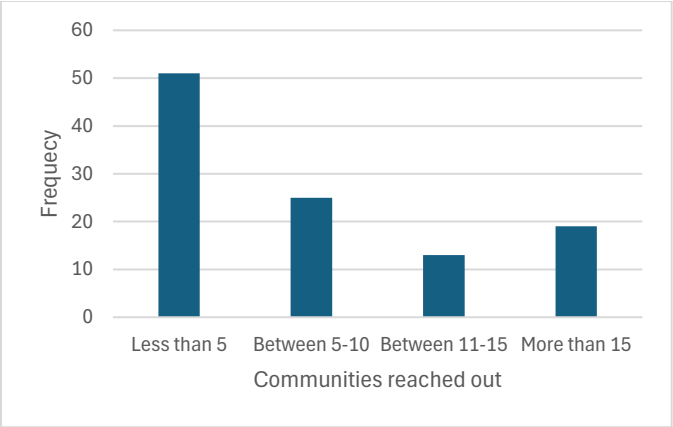

Figure 6. Community outreach using SWG

When asked about how easy it was for community members to understand the game, 72% of respondents indicated that the game was easy to understand, while 24% of them felt it was somewhat understandable (Figure 7). About 80% of the practitioners reported that the SWG was very effective in engaging community members during game sessions and related discussions, while 18% indicated that the game was somewhat engaging for participants (Figure 8). 83% agreed that community members could completely relate the game to their real-life situations, whereas 16% reported that community members related game play and their real-life community water management challenges partially (Figure 9). All except one respondent indicated that debriefing after the games helped community members understood how to coordinate themselves to manage community water resources and plan for sustaining their water infrastructure.

The respondents highlighted several aspects that participants enjoyed most about the game. Most practitioners emphasized community members' recognition of their interdependence in managing and using water and the debriefing sessions that helped them transferring lessons learned from games to their real-life water management challenges. One respondent stressed that: "*Game playing community members realized that water availability is dependent on their contributions to maintain water infrastructures well and their crop choices would have real consequences for water availability for livestock and domestic purposes. When all seven players chose low-water consumption crops and invested a good amount of money in the repair of the dam's canal, all the farmers received water for irrigation during the Rabi season. Following this recognition, there is now growing interest during community discussions in topics, like water management, crop choice, inclusive conflict resolution, and collective unity.*"

As related to women's participation, around 47% indicated that women always participated in game sessions and discussions about water management in their communities, while 51% reported that women participated most of the time (Figure 10). Despite good participation when they attended game sessions, practitioners reported that the overall number of women participating in game sessions was less than that of men. One respondent explained that "*This also has a cultural aspect. Only male farmers are traditionally expected to discuss and make decisions about water management. However, now there are women's organizations in every village that encourage them to participate in community decision process*." There were also specific challenges reported on women's participation. In some cases, women were initially not interested in playing the games and only after participating for some time they were actively involved. Some facilitators observed that women sometimes struggled to articulate their deliberations in making crop choices.

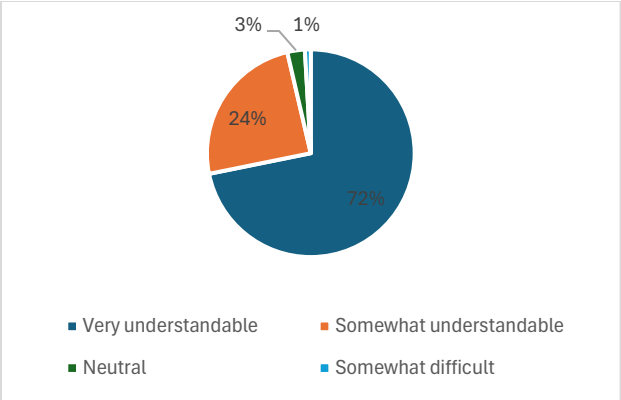

Figure 7. Levels of community members' understanding of SWG and related discussions

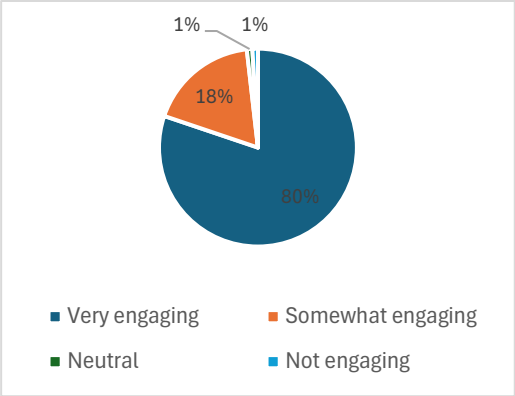

Figure 8. Levels of community members' engagement in SWG

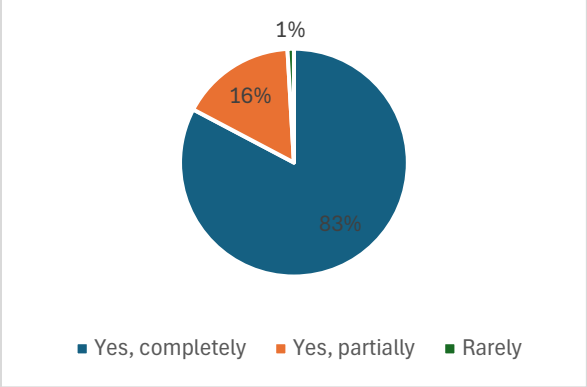

Figure 9. Community members related the SWG and real-life water management challenges

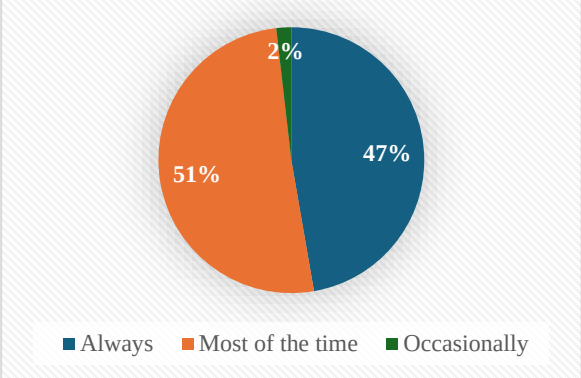

Figure 10. Women's participation in SWG sessions and discussions

4. Practitioners' perspective on integrating surface water games into community water management tools

Facilitators were asked about their opinion on the importance of integrating surface water games into community water management tools. All practitioners agreed on the importance of SWGs to help stakeholders, such as government, non-governmental organizations, or private organizations, in implementing their projects and building the capacity of local governance to manage water resources and sustain infrastructure. They highlighted several benefits of integrating SWGs into their water management and governance toolkits. The main message was that the SWG offered a mechanism for community engagement to raise awareness that water is a valuable common resource. Such understanding helped communities to coordinate to craft rules and regulations for a better management of water resources and their sustainable use. The game decisions helped community members to link their decisions on contributions to maintenance of water infrastructures and crop choices with water availability and variability in real time, providing them data points to understand consequences of individual decisions to overall community well-being. Overall, 94% of the practitioners appreciated the value of the game and would recommend it to other implementing agents who are interested in water management for learning or experimentation pur-

poses (Figure 11). The remaining 6% hesitated to automatically recommend the game for other implementing agents, citing the demanding logistical arrangement and facilitation efforts of running the games. According to our estimates, conducting one SWG session at one site costs between 70 and 120 USD depending on accessibility of the community. This includes the time of two facilitators, transport, materials and initial training.

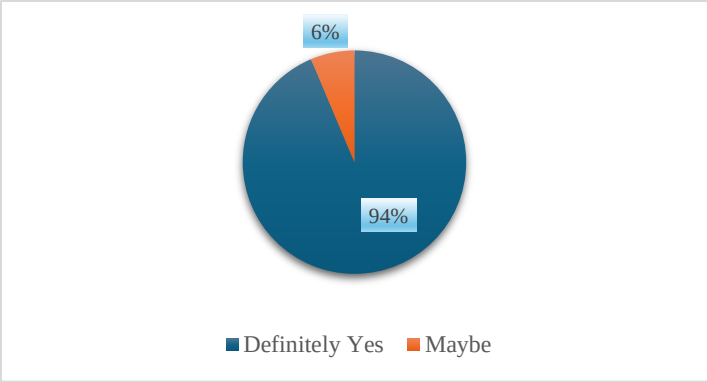

Figure 11. Practitioners' willingness to recommend the SWG for other implementing agents

Other practitioners reported some practical challenges of integrating the SWGs into their water management and governance toolkits. To play the game, ideally, three facilitators would be required: the main facilitator, a data manager, and a monitor. Respondents indicated that arranging a team of three facilitators had been a challenge for them. Further, as the information for the game play is summarized in 3 banners, finding appropriate place to hang all of them was difficult at some meeting points in villages where there was no community meeting facility. The other commonly identified challenge was related to community mobilization. Many practitioners raised the issue of time availability from participating communities. One game session would usually take 1 to 1.5 hours, and the debriefing requires another 45 to 60 minutes. Game participants often expressed that the time needed for the game play and then the debriefing was long, making it difficult for them to participate in all sessions. This was more difficult for women due to domestic responsibilities. Some practitioners indicated that at least some basic snacks were expected, considering the duration of the intervention.

Practitioners suggested improvements in some areas related to elements of the game. They suggested for the information be summarized in one banner. Another suggestion was for the game to include a punitive element for players that would not cooperate and adhere to prescribed team rules below a threshold of community well-being. Some facilitators expressed a shortage of the hard-copy materials for game play. More than 60% of the practitioners suggested for changing the denominations of the play money notes from 2000 to 500.

Finally, practitioners called for continued support and collaboration, especially in capacity building. Organizations such as the Odisha Livelihoods Mission had already started training their frontline workers to enable them effectively integrate water games into water management tools. Some respondents also emphasized the need to provide a platform for continued community discussions beyond the game play and debriefings.

ABOUT THE AUTHORS

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Funding for this work was provided by CGIAR NEXUS Gains Initiative and the German Federal Ministry for Economic Cooperation and Development, commissioned and administered through the Deutsche Gesellschaft für Internationale Zusammenarbeit, grant number: 81250397. This publication has been prepared as an output of Nexus Gains and the Scaling up experiential learning tools for sustainable water governance in India project and has not been independently peer reviewed. Any opinions expressed here belong to the author(s) and are not necessarily representative of or endorsed by IFPRI.

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