Data Article

Public good experiment data of a water game framed to Rajasthan/India

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A B S T R A C T

This dataset belongs to a framed economic field experiment conducted in 2016 in Bhilwara district in Rajasthan state in India. A public good game was framed as dam management challenge. We made incentivized payments based on the game earnings. The data are organized as a panel defined by players and experiment rounds. The dataset contains the experiment decisions in different phases of the experiment as well as socio-economic variables of the anonymized players. The data can be accessed through the Dataverse of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) under the following link: https://doi.org/10.21421/D2/MFT8ZD. The data article is related to the research article Falk et al. [2] on “Experimental games for developing institutional capacity to manage common water infrastructure in India”.

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1. Data

The data stem from a framed public good experiment replicating challenges associated with minor irrigation infrastructure management. Research was carried out in Bhilwara district in Rajasthan state in India.

The experiment design has the general features of a standard irrigation game as presented by Cardenas et al. [1] and Janssen et al. [4,5]. Details on the design are provided in the subsequent section Experimental Design, Materials, and Methods.

The resulting data are organized as a panel defined by player IDs (variable player id) and experiment rounds (variable round). Each player conducted multiple rounds and made in each round an investment decision (variable investment). Based on the pay-off function the player received an earning from the public good (variable dam_earn) to which the saved endowment was added to calculate the total round earning (variable round_earn).

The experiment was conducted in 30 communities (variable site_ID) with 10 players each. It was played in three phases: first phase with discrete decisions (variable Variation e value baseline); second phase providing social information and permitting communication (variable Variation e value communication); third stage with game variation slightly changing the game structure.
Variation — all other values). The data include basic socio-economic variables and counts of players’ contributions to discussions during the game.

The data are made available in csv and Stata data formats. The STATA data file has the advantages that it contains more detailed variable and value labels. In addition, a file describing the data is available under ICRISAT Dataverse.

2. Experimental design, materials, and methods

Like all public good experiments, the game focused on the provisioning action situation, namely the maintenance of the common community water infrastructure. Pay-offs were adjusted to region-specific estimates of average maintenance costs of dams as well as typical income derived from dam management.

At the beginning of each game round, players received an initial endowment of 5000 Play Rupees. In the first five game rounds, the players decided simultaneously and concealed which share of this endowment they wanted to invest in maintaining the virtual dam. They wrote their decisions on reusable cards. The total of all individual contributions determined the group earning based on a non-linear pay-off function. In each round, the group earning was distributed equally among the players.

After playing five rounds with concealed decisions, we announced that the players’ decision will be disclosed in the subsequent rounds. From round six onwards, contributions and earnings were written on a poster visible to all. After each round, players could openly discuss for five minutes.

After another five rounds, the facilitators chose one out of six game variations based on the content of the specific group's discussions. The game variation was played for five rounds.

We made incentivized payments in order to improve the reliability and validity of our games. All game decisions were entered into Excel-tables during the experiment sessions. A summary of the experiment design and the third-phase variations is given in Falk et al. [2]. The complete experiment protocol can be found under http://gamesforsustainability.org/India_village_dam_PG_game_ICRISAT_2016.pdf.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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