Community-Driven Development and the Value of Participation: Experimental Evidence from Bangladesh

(Preliminary and not for citation)

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March 27, 2018

Abstract

By encouraging participation and dialogue between social groups, participatory development programs are often promoted as a potential channel to build social cohesion and strengthen democratic values and practices. This project evaluates the impact of Community-Driven Development (CDD) intervention on preferences for participatory decision-making. I study an arsenic mitigation program implemented in rural communities in Bangladesh characterized by strong participatory components. I designed a novel lab-in-the-field experiment to measure the value attached to participation. Preliminary results indicate that the value of participatory decision-making increases with exposure to our CDD program. The overall effect is driven primarily by an increase in the intrinsic value of participation in response to our CDD program, suggesting that the exposure to participatory governance has an impact on the value that citizens attach to inclusive decision-making practices per se, above and beyond instrumental considerations. The evidence presented in this paper supports a more optimistic view on the potential of participatory development to reinforce preferences for inclusive institutions, and it provides interesting avenues for future research on the formation and persistence of norms and institutions.

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I would like to thank Jakob Svensson and Anna Tompsett for their guidance and support. The project greatly benefited from the advice and discussions with Anna Aevarsdottir, Ingvild Almas, Jonathan de Quidt, Selene Ghisolfi, Magnus Johannesson, Anna Sandberg and Domenico Viganola. I would also like to thank for their comments and suggestions seminar participants at the 2018 SANEM Annual Economists’ Conference, 2017 Interdisciplinary Ph.D. Workshop on Sustainable Development at Columbia University, IIES Brown Bag, Boston University Political Economy Reading Group, MIT Political Economy Lunch, 2016 PODER Summer School, Stockholm University Brown Bag, 2016 ASWEDE Annual Conference and 2016 CBESS Annual PhD Workshop.

This project is realized in collaboration with NGO Forum for Public Health. I thank NGO Forum Executive Director Mr S.M.A. Rashid for his cooperation, and Ahasan Habib for his support in all critical phases of the project. I am indebted to Jahirul Islam for tireless and invaluable supervision of the project, and to the extraordinary team of enumerators for complementing the rigorous implementation of the project protocol with rich and fulfilling interactions with the participants in the experiment: Ahsan Habib, Tarique Islam, Suvo, Mir Rahian, Jannatun Chowdhury and Kawser Ahmed. I thank all Bangladeshi participants to the lab-in-the-field experiment, who showed a great cooperation during all phases of the project and agreed to take part in it with the hope of contributing to the design of better development work in their region.

I am grateful for funding from LEAP, IGC Bangladesh, JPAL-GI, Kock-Lindberg Foundation and Mannerfälts Fund. AEA RCT registration: AEARCTR-0001809.
1 Introduction

As a broad consensus holds that institutions are a fundamental pillar of economic prosperity, a large attention has been recently drawn on how institutions evolve or why. One approach to these questions looks at how institutional development is driven by the initial conditions in the society. A complementary view focuses instead at whether the exposure to democratic or inclusive decision-making processes can induce local institutional changes. Related to the latter, a long-standing belief among development practitioners is that Community-Driven Development (CDD) and participatory programs can affect local institutions, for instance by building social cohesion, reinforcing capacity for collective action or strengthening democratic values and practices (Mansuri and Rao, 2013). Despite this optimistic view, and a positive effect of CDD programs on self-reported pro-social values and norms [Ibanez and Rao (2005), Labonne and Chase (2011) and Avdeenko and Gilligan (2015)], behaviors and realized institutions in real-world scenarios do not seem to vary with previous exposure to democratic and inclusive institutions [Casey et al. (2012) and (Humphreys et al., 2012)]. Recent evidence by Fearon et al. (2015) and Beath et al. (2013) suggests that, despite participatory development programs may successfully creates inclusive and effective institutions, communities will not necessarily choose to adopt them.

Inspired by these considerations, in this paper I advance the idea that we can better understand institutional development through the lens of preferences over different approaches to decision-making to solve collective action problems. One explanation of the existing evidence is that the exercise of voice and choice can be costly, for instance because of the monetary value of the time dedicated to participation, and the material/social costs when participation requires taking positions that are contrary to the interests of powerful groups (Mansuri and Rao, 2004), and therefore communities might simply prefer to opt-out from inclusive institutions. An alternative explanation is that the exposure to CDD programs can change social values and preferences for democratic practices in receiving communities, but these changes will not necessarily translate into realized institutional reforms, as institutions are persistent and constrained by the existing social and political structures within a society.

In this paper, I pose two questions. First, I study whether agents display a positive or negative value for participatory decision-making approaches. While the economic concept of procedural utility advanced by Frey et al. (2004) and Frey and Stutzer (2005) has already being tested in the context of individual decision-making,1 this is the first paper to extend this literature to group decision-making.2 I elicit individual preferences for participatory decision-making within a lab-in-the-field experiment, divided in three stages. First, participants are involved in one group task that mimics the decision-making process of standard CDD interventions: participants complete an unregulated face-to-face negotiation and are required to take decision by consensus. In the second stage, the Participation task, I measure willingness to pay (WTP) for participatory decision-making. I form new groups, and I select one player per group. Under different price conditions, the selected player chooses whether the outcomes for her new group for the last round of the experiment should be determined through a group negotiation process or not. In case of non-participatory decision-making, payoffs are defined by assigning to the group the bargaining outcome from the first round of another group, randomly extracted within the same community (“assigned distribution”). The design of the experiment is incentive compatible and strategy-proof, and it ensures that preferences are not driven by selection.

1The existing evidence indicates that agents evaluate the decision process per se (Bolton et al., 2005), their voting rights (Glith and Weck-Hannemann, 1997), their autonomy and decision power [Behr et al. (2013), Bartling et al. (2014), Owens et al. (2014), Nerú and Rommeswinkel (2014)].

2In the context of participatory development, Mansuri and Rao (2004) already suggested that the exercise of voice and choice can be costly, for instance because of monetary value of the time dedicated to participation, and the material/social costs when participation requires taking positions that are contrary to the interests of powerful groups. On the other hand, Mansuri and Rao (2013) stress that beneficiaries seem to value being consulted and involved, and deliberative processes might create a sense of legitimacy for the resource allocation. While previous studies [Ofek (2010); Aktaş et al. (2012); Beath et al. (2017); Madajewicz et al. (2017)] test whether and how deliberative processes increase ex-post survey measures of satisfaction regarding an intervention, my design allows me to elicits incentivized ex-ante valuations.
effect or social pressure. In order to minimize the risks of reporting bias, I incentivize the elicitation procedure: during the last round of the experimental session, the choices expressed by players in the *Participation task* for their group are implemented. I model players’ WTP for participatory decision-making as having two components: the expected monetary gain from entering the negotiation stage (instrumental value) plus a possible intrinsic utility component associated with retaining group decision rights (intrinsic value). By design, the instrumental component of the WTP for participatory decision-making of an average player should be equal to zero: an average player should expect to receive the same outcome from the last round under the participatory option and under the “assigned distribution” option. In order to have explicit measures of the intrinsic and the instrumental value of participatory decision-making, I also elicit players’ beliefs on the expected outcomes under the two alternative procedures.

Second, I evaluate whether the exposure to a CDD program can alter individual preferences for participatory practices. The CDD program I evaluate is conducted within the research project by Coccio et al. (2018a). The intervention targets rural Bangladeshi communities highly contaminated with arsenic, and it consists of a package of technical advice and subsidies for the installation of new sources of safe drinking water. The program has strong participatory components, for instance by requiring a minimum representation of different social groups and decisions to be taken by unanimous consensus. In the context of rural Bangladesh, informal decision-making processes are often restricted to elites and influential individuals, and women rarely play an active role in the public sphere. This consideration motivates this study, which aims at evaluating whether the temporary introduction of a more inclusive process has an impact on local institutions and norms. Exposure to the CDD program might affect preferences over different decision-making processes through three channels. First, previous exposure to a CDD intervention might increase cooperation within the community and the ability of successfully solving collective action problems via consensus-based decision-making process. Second, it can reduce the (realized or perceived by households) costs of participatory decision-making, for example in terms of the time cost of community deliberations, the social cost of active participation in a public debate, or the risk of community conflict. Finally, agents may develop a taste for participatory practices with experience, learning about the value placed on taking part in common interest decisions and the sense of legitimacy created when all stakeholders are consulted and involved in the decision-making process. The design of the lab-in-the-field experiment allows me to explore these potential mechanisms.

My results indicate that taking decisions via a democratic and inclusive process is (weakly) preferred by the majority of participants in my sample. However, participation in the decision-making process is selected, with women and the elderly less likely to engage into public consultations while leaders and more educated participants place a higher value on participation. Preferences are driven by instrumental and non-instrumental considerations, and are influenced by the outcomes and the quality of similar decision-making processes already experienced by agents.

The policy evaluation analysis indicates that the value of participatory decision-making increases

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3The strategic components of participation decisions in collective decision-making have been theorized by Osborne et al. (2000) and tested empirically by Turner and Wening (2005). In their model, agents anticipate the bargaining dynamics and the resulting outcome conditional on the set of participants and base their participation decisions on these expectations. Although I focus on preferences between different institutional arrangements, rather than on participation decisions, their framework is useful to conceptualize how the instrumental value for participatory decision-making might be driven by strategic considerations.

4“Community contributions, participatory decision-making and local public goods: A field experiment in Bangladesh” (CCLPG).

5In this paper I follow an emerging literature that adopts lab-in-the-field experiments as a tool to develop better measures to evaluate the impact of development programs on social norms, values and preferences, including Fearon et al. (2009), Fearon et al. (2015) and Ardeenko and Gilligan (2015) in the context of participatory governance. While these previous contributions rely on standard experimental measures of social cohesion and social capital, in my project I introduce a novel measure of procedural utility.
with exposure to our CDD program. Despite CDD programs are often promoted as a way to empower the more marginalized groups in the society (women, non-elites, the poorer), I do not find that the main treatment effect varies significantly across socio-economic groups. The overall effect is driven primarily by an increase in the intrinsic value of participation in response to our CDD intervention, suggesting that the exposure to participatory governance has an impact on the value that citizens attach to inclusive decision-making practices per se, above and beyond instrumental motives. These considerations are confirmed by the analysis of mechanisms, which shows that our CDD program did not make participatory processes more efficient or effective in receiving communities, but it did decrease the risk of conflicts within the group discussion, therefore reducing the psychological costs and efforts associated to a face-to-face negotiation dynamics.

My results support a more optimistic view on the potential of spillover effects from development interventions to broad social changes in receiving communities, and it encourages initiatives from governments and international organizations aimed at promoting community participation and decentralization reforms. This evidence also provides interesting avenues for future research on the formation and development of norms and institutions, suggesting that institutions are persistent despite individual preferences and values do respond to exogenous shocks, such as the exposure to democratic and inclusive decision-making processes.

2 The intervention

I evaluate the impact on value of participation of an arsenic mitigation program (CCLPG) conducted in rural Bangladesh by Cocciole et al. (2018a). The program consists in a package of technical advice and subsidies for the installation of new sources of safe drinking water, and it has strong participatory components. In this project I exploit the random assignment of communities to the treatment or control group.

The CCLPG program targets communities with high levels of arsenic contamination. Based on water test results from a census of all existing sources of drinking water in the community (performed during the CCLPG baseline survey), we enroll in the CCLPG intervention 155 communities, 117 selected randomly to receive the intervention. Treated communities are randomly assigned to three contribution requirements: under the cash contribution approach communities are required to co-fund the installation costs; under the labor contribution approach communities are required to provide labor to help with the installation work; under the waiver approach the new water source is installed for free. The randomization of the program is performed during public lottery meetings, where we invite representatives from each eligible community. In order to guarantee complete transparency of the randomization process and full understanding by beneficiaries, the randomization is stratified only by Union Parishad.

The key decisions to be taken in relation to the program are: (i) how many water sources to install in the community; (ii) where to construct them; (iii) how to divide the required contributions between households; (iv) the households responsible for the management and maintenance of each new water source. Communities take all decisions at meeting(s) organized by project staff. Our field supervisors play a strong facilitatory role, both before and during the community meeting(s). We organize information meetings with men and women, increasing awareness on water safety issues and stressing the importance that everyone takes active part to the community meeting. We impose minimum participation requirements in order to start the community meeting, and require that all decisions are taken by unanimous consensus, during the meeting in the presence of project staff. We do

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6The program is randomized at “Treatment Unit” level. We define Treatment Units as communities of 50-250 households. We used administrative household lists in order to define candidate Treatment Units. We excluded from the study villages with less than 50 households and we divided larger villages into several smaller Treatment Units along pre-existing geographic boundaries. We refer to “communities” or “Treatment units” interchangeably.
not implement the project in communities where an agreement is not found after a maximum of three community meeting(s). The rules and procedures imposed on the decision-making process are designed to reduce the likelihood that influential groups or individuals could co-opt the decision-making process, and ensure that everyone is guaranteed the right to express his/her voice.

In the context of rural Bangladesh, informal decision-making processes are often restricted to elites and influential individuals, and women rarely play an active role in the public sphere. This consideration motivates this study, which aims at evaluating whether the temporary introduction of a more participatory process can have long lasting effects on local institutions, mediated by individual preferences of beneficiaries on how common interest decisions in their village should be taken and the value they place on participatory practices.

The intervention has been implemented between October 2015 and August 2017. All communities selected to receive the program initially decided to participate, with the exception of one community. Communities agreed on tubewell location(s) during the first community meeting in 91% of cases, and during the second community meeting in 8% of cases. In only one case we failed to deliver the intervention because the community failed to find a consensus on tubewell location(s). We successfully installed at least one tubewell in 64% of treated communities. In communities assigned to labor or waiver approach the causes of failures are only related to hydrogeological constraints impeding installation or lack of suitable land. However, in cash communities the low uptake is primarily due to communities failing to raise the required cash contributions. On average, we installed 1.1 tubewells in communities assigned to the labor or waiver approach, and 0.2 in communities assigned to the cash approach. The majority of tubewells (64%) are located on private land, and they are on average around 300 feet deep. For each installed tubewell we asked the community to select two caretakers, one man and one woman. All caretakers are participate in a one-day training course and are provided with a toolkit for basic maintenance, as well as contact details for local engineers who are able to provide services for more advanced repairs if necessary. The details of the implementation are reported in greater details in Cocciolo et al. (2018b).

3 Lab-in-the-field experiment

The purpose of the lab-in-the-field experiment is to measure a novel dimension of social preferences: value of participatory decision-making.

The design of the experiment poses several challenges. First, as discussed in Bartling et al. (2014), preferences for being in control of own decisions might be driven by two factor: the instrumental value of different decision-making processes in terms of expected outcomes; the intrinsic value that agents might place on how decisions are taken (procedural utility). One of the main objective of the design is to allow to disentangle these two factors in the context of group decisions-making. A second challenge is related to the specific context of the population involved in the study, characterized by low literacy rate and therefore constraining the design in order to ensure full understanding from all participants. I will present the experimental design in light of these constraints and objectives.

The experimental session is divided in 5 main stages, illustrated in Table 1. In Appendix D I report the scripts for each stage of the experimental session.

The lab-in-the-field experiment is conducted with 12 groups per community. The group tasks completed during Task 1, Task 2 and Task 3 are designed in order to mimic closely the decision making-process and implementation rules in the CCLPG project. Participants are divided in groups of three and discuss face-to-face in an unregulated negotiation process in order to take decisions for the group, which entails common and individual economic interests. Groups are pre-formed, and are different for each task.

The project is conducted in collaboration with Selene Ghisolfi. In a related paper, Ghisolfi (2018) studies the dynamics of group-bargaining occurring during Task 1 and Task 2.
The focus of this paper is on the “Participation tasks”. It allows me to measure individual willingness to pay for participatory decision-making, which I interpret as a measure of the value that agents attach to take decisions regarding their group in a participatory way. Players are informed that they might complete a second round of the group task they just completed, and we allow them to choose the decision making-process for this second round, i.e. whether or not to enter the group negotiation stage. During Task 3 we implement the choices expressed by players during the “Participation tasks”.

Players complete each part of the experimental session using tokens. Before each group task (Task 1, Task 2 and Task 3) we assign to each participant an initial individual endowment. Within each community, we randomly pre-assign players to the equality/inequality treatment:

- Equality: before each task, participants receive an initial endowment of 10 tokens.
- Inequality: before each task, participants in each group randomly receive initial endowments of 15, 10 token or 5 tokens.

During Task 1 and Task 2, groups complete two group face-to-face decision-making exercises, the “Contribution task” and the “Redistribution task”. The face-to-face design allows to mimic the collective decision-making process during the CCLPG project, where decisions are taken by the community during an open negotiation, community members know each other and will meet each other after the deliberation.

During the “Redistribution task”, participants receive their individual endowment and negotiate on how to redistribute among themselves a group endowment of 30 tokens. In the “Contribution task”, participants decide how much of their initial endowment to contribute for the creation of a common pool of resources, equivalent to twice the sum of the contributions, and simultaneously negotiate on how to distribute it. The maximum possible winning is be the same in the two tasks. We randomize across
communities the order in which the “Contribution task” and the “Redistribution task” are played. The “Redistribution task” mimics the waiver treatment status in the CCLPG project, where communities receive the intervention for free. The “Contribution task” is the experimental counterpart of the two CCLPG treatments that require communities to co-fund the project with cash or labour contributions.

Similarly as in the CCLPG program, we require group decisions to be taken by unanimous consensus. Groups have 20 minutes to reach an agreement, otherwise players are only entitled to keep their initial endowment. This features imposes similar constraints as in the CCLPG project, where communities have a maximum of 3 community meetings to reach an unanimous agreement, otherwise they lose the possibility to receive the intervention.

For both group tasks, participants play one training round and one round with real money at stake. Before starting the trail round we verify participants understanding on the rules of the tasks and on how their final rewards are calculated. The tasks are designed in order to enable all players, even those with poor numerical skills, to effectively take part in the group discussion.

For this paper, the “Contribution task” and the “Redistribution task” serve two main purposes. First, during the first round of the group tasks, all participants experience the negotiation process and the discussion dynamics and observe the outcomes from the deliberation. This is a crucial feature in order to allow participants to report meaningful choices when we present them the option to choose the decision-making process for Task 3. Second, it allows to directly observe players’ performance within an open negotiation process, which I expect to play an import role in driving their preferences for the decision-making process for Task 3.

During the “Participation task”, I conduct an elicitation procedure in order to measure willingness to pay for participatory decision-making. I conduct this part of the experimental session with only 1/3 of participants, one player per group, individually assisted by one enumerator. I assign to these players their initial individual endowment for Task 3. They are informed that during Task 3 they might face again the same group task as in the “Contribution task” or the “Redistribution task”, with new group peers. However, during the “Participation task”, they can decide how they want their group to take decisions during Task 3. The first option is to take part again in the bargaining stage. The other option is to not participate in the decision and receive a given distribution of tokens. In this latter case I assign to the group the agreement taken during that task by another group, randomly extracted among those with the same equality/inequality treatment. Each person in the group receive the final number of tokens obtained during that group task by the person in the assigned group with the same initial individual endowment.

I measure individual willingness to pay for participatory decision-making adopting a binding auction design. I start by presenting participants a hypothetical choice between “participatory decision-making” and “assigned distribution” with zero price. I present to all participant ten other choices by varying the price attached to the participatory option, ranging from -5 tokens to +5 tokens. I define individual WTP as the highest price attached to the participatory option at which the participant does not choose the “assigned distribution” option.
Table 2: Price list for the elicitation procedure

<table>
<thead>
<tr>
<th>Choice</th>
<th>Alternative A</th>
<th>Alternative B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Participate in group task</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>2</td>
<td>Participate in group task - 1</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>3</td>
<td>Participate in group task - 2</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>4</td>
<td>Participate in group task - 3</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>5</td>
<td>Participate in group task - 4</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>6</td>
<td>Participate in group task - 5</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>7</td>
<td>Participate in group task + 1</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>8</td>
<td>Participate in group task + 2</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>9</td>
<td>Participate in group task + 3</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>10</td>
<td>Participate in group task + 4</td>
<td>Assigned distribution</td>
</tr>
<tr>
<td>11</td>
<td>Participate in group task + 5</td>
<td>Assigned distribution</td>
</tr>
</tbody>
</table>

The decision rule for Task 3 is determined by extracting the task (“Contribution task” or “Redistribution task”) and one price between -5 tokens and +5 tokens. Players in the “Participation task” with a WTP equal or higher than the extracted price complete Task 3 together with their new group peers, and pay/receive the extracted price. Players in the “Participation task” with a WTP lower than the extracted price, as well as their assigned group peers, receive an assigned distribution by randomly extracting one group (excluding their own) within the same equality/inequality treatment.

I model players’ WTP for participatory decision-making as having two components: the expected monetary gain from entering the negotiation stage (instrumental value) plus a possible intrinsic utility component associated with retaining group decision rights (intrinsic value). An advantage of the experimental setting is that, by design, an average player should expect to receive the same outcome under the “participatory decision-making” option and under the “assigned distribution” option. This feature allows to interpret the WTP measure as a close approximation of the intrinsic value of participation in group decisions.\(^8\)

\[
WTP_{PDM} = \frac{Expected\ payoff_{PDM} - Expected\ payoff_{AD}}{Intrinsic\ value_{PDM} - Intrinsic\ value_{AD}}
\]

In order to obtain a measure of the intrinsic value of participatory decision-making for all players, including those that expect to receive above- or below-average outcomes from the group negotiation, I elicit players’ beliefs on their expected outcomes under the two decision-rules relative to Task 1 and 2. I incentivize their answers by awarding a prize if their guess under the “assigned distribution” option is correct. The beliefs elicitation is not incentivized for the “participatory decision-making” option, as it would not be incentive compatible given the ability of players to collude during Task 3.

The design presents several further advantages. First, because I present all price conditions to all participants and I implement their choices for Task 3, the elicitation procedure is incentive compatible and it ensures that it is optimal for all participants to truthfully report their preferences. Second, by design players do not know the identity of their group members for Task 3, ensuring that their choices are not driven by characteristics of their group peers, which might be unobservable to me. Third, choices are elicited with the assistance of one enumerator, privately and independently from other players, ensuring understanding from all participants and preventing individual choices to be influenced by peer pressure or reputation concerns. Forth, the random extraction of the price ensures

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\(^8\)For players that expect to receive above- or below-average outcomes from the group negotiation, the WTP measure should be interpreted as the sum of the instrumental and intrinsic components.
that individual choices are not fully revealed by the decision-making process implemented during Task 3.

Finally, enumerators take several steps in order to ensure understanding from all participants during the group tasks and during the “Participation tasks”. Before the WTP elicitation, enumerators verify individual understanding for each participant on the two decision-making processes and on how their final outcome is determined under the two alternatives. Enumerators verify that crucial elements of the design are clear, specifically that under the “participatory decision-making” option they will bargain with new group peers, and that under the “assigned distribution” option they will be assigned the final outcome of another player randomly extracted and with their same initial individual endowment. Enumerators stress that it is best for them to truthfully report their preferences, that their choices are confidential, and that, by design, other players cannot infer their answers from the decision-making process implemented during Task 3. In order to facilitate participants in their choices, enumerators remind them about their results in the previous round with money at stake, ask them whether they liked or disliked the bargaining stage and how much they expect to be influential in the last round given their initial tokens.

At the end of the experimental session, we reward participants with a fixed show-up fee of 40 Bangladeshi Takas (1 BDT = 0.013 USD in December 2016).\textsuperscript{9} We disburse a bonus equal to the sum of player’s outcomes from the real round with money at stake during Task 1, Task 2 and Task 3, converting 1 token in 5 BDT. For players in the “Participation task”, we add(subtract) the extracted price in case they chose the “participatory decision-making” option under the extracted scenario (price-task). We award a prize of 30 BDT for correct beliefs on outcomes under the “assigned distribution” option. Participants can expect a total reward between 250 BDT and 500 BDT, equivalent to 0.8-1.7 local daily wage.\textsuperscript{10} Players in the “Participation tasks” express their preferences on the decision-making process for the third task of the experimental session, with real-stake incentives of approximately 1/3 of local daily wage.

It is worth to notice that I always discussed the aim of this project with the local staff in terms of understanding the dynamics of group bargaining and preferences for participation in the context of rural Bangladesh. I never revealed that the project aims at evaluating how the CCLPG intervention shapes social preferences and value of participation, reducing the risk of experimenter demand effects and differential behaviors of the staff in treated and control communities.

4 Data

The project relies on data collected at several stages, both within the CCLPG program and during the lab-in-the-field experiment. The set up allows me to link individual data from the lab-in-the-field experiment to detailed information collected within the CCLPG program during the baseline survey and during the project implementation. The richness of the data allows me to draw interesting and novel insights on the mechanisms that might drive the effect of the CCLPG program on value of participation.

The baseline data collection was carried out between August 2015 and February 2016, before the randomization of the CCLPG treatment status and before the implementation of the intervention. The baseline data collection was structured in two parts: the water source survey and the household survey with a random sample of households. During the water source survey we collected basic information for each source of drinking water existing in the community. We surveyed 40 households per community, randomly sampling from up-to-date household lists, which we obtained by digitizing, verifying and correcting existing administrative household lists. The household survey consisted in a

\textsuperscript{9}Since the Bangladeshi law requires a flat 10 BDT tax from those with a daily income larger than 400 BDT, we compensate for it by awarding a 50 BDT show up fee to participants whose outcome is larger than 400 BDT.

\textsuperscript{10}The average daily income in rural Bangladesh is approximately 300 BDT.
detailed interview on household’s composition, health, wealth, network, leadership, participation in
the life of the community, and habits related to water collection and use. I rely on this information in
order to stratify the sample of participants to the lab-in-the-field experiment by household leadership
status (see Section 5), as well as for enriching our empirical analysis.

The CCLPG intervention started in October 2015 and was completed by August 2017. During the
implementation stage we collect a rich set of data, including household participation in the community
meeting, the final location of new water source(s), the full set of project tubewell locations proposed
and discussed during the community meeting, and the array of financial contributions within the
community. During the community meeting we record for each household the number of male and
female attendees, disaggregated by age groups (16-34 and 35+), as well as whether household members
were influential during the meeting. I rely on this rich data in order to characterize the discussion
dynamic, the degree of participation of each household in the public consultation, and the distribution
of benefits from the program within the community.

The lab-in-the-field experiment was run between December 2016 and May 2017. The lab-in-the-
field experiment is conducted only once the CCLPG program is completed: once the installation
work is completed or in case the community failed to raise contributions. We conduct an individual survey
on values and attitudes with all participants successfully invited to the experiment (Appendix C). The
questionnaire is carried out within few days before the experimental session, during the house-to-house
visits to personally invite participants to the lab. It includes measures of age, education, occupation,
risk aversion, social values and attitudes, as well as a dictator game incentivized with 50 BDT. During
the experimental session, a team of six enumerators record the outcomes from each task and the time
required to each group/player to complete each task, as well as their observations on group dynamics,
their perceived level of conflict within the group and individual bargaining skills. In each community
we record the audio throughout the whole experimental session for half of the groups. We conduct a
short individual questionnaire after the experimental session, before payments are disbursed (Appendix
D.5). It records participants’ feedbacks on the lab, their satisfaction with their final outcomes from
each task, and their understanding of the tasks.

5 Sample

5.1 Selection of villages

I carry out the lab-in-the-field experiment in 96 rural communities (35 control and 61 treated commu-
nities) in the Bogra region, Bangladesh.

I select the villages where to conduct the lab-in-the-field experiment in order to maximize the
balance between the treatment and control group on a set of pre-intervention observables. The main
rationale for this optimization procedure is small sample bias reduction, a valid concern posed by
my sample size consisting in less than one hundred communities. I follow an optimization algorithm
that selects as best sample - out of 1,000 random samples - the one with the highest p value from
the F-test on the balance of pre-intervention observables between treated and control villages. The
random sampling procedure respects the stratification by Union Parishad of the CCLPG intervention,
and it is balanced on contribution approaches. In Appendix A I describe this optimization procedure
in further details, and I report the set of pre-intervention observables used to test the balance between
the treatment and control group. As ensured by this optimization procedure, treated and control
communities selected for the lab-in-the-field experiment are balanced (Table 12).

According to the initial design, I selected 92 communities for the lab-in-the-field experiment, 35
control and 57 treated communities. The optimization procedure described in Appendix A refers to

11We work sequentially in nearby communities, as an attempt to collect the experimental data before information
about the lab can spread across communities through existing social networks.
this initial sample size. Originally, I considered ineligible for this project nine communities: (i) one where the community was not interested in holding the meeting; (ii) two where the community did not reach an agreement during the community meetings; (iii) one where installation failed for one tubewell and cash contributions failed for the other tubewell; (iv) five communities in Deuli Union where installations failed due to hydro-geological reasons.

Two reasons motivated this choice. First, in agreement with the field staff, I initially considered unfeasible to conduct the lab-in-the-field experiment in communities where the project failed “endogenously” due to tensions and disagreements within the community or lack of interest in the CCLPG program (cases (i) - (iii)). Although aware that this selection might create an upward bias in our estimates, this choice was imposed by feasibility constraints. As the field staff gained more experience in introducing the project to the communities and in involving participants in the experimental session, I re-evaluated this decision. In early February 2017, after two months from the start of the project, I added the four communities in categories (i)-(iii) to the original sample of 92 communities selected via the optimization algorithm. The final sample consists of 96 communities. As a result, the final sample is not randomly selected, and potentially creating a downward bias in the estimates. In the empirical analysis, as pre-specified in the pre-analysis plan, I will deal with this sample selection by correcting standard errors and performing several robustness checks in order to assess to which extent the results are affected by the sample selection.

Second, when I finalized the sample of villages involved in the lab-in-the-field experiment (early December 2016), we were exploring the possibility to adopt an improved technology to successfully install the tubewell(s) in the whole project area, and therefore we preferred to not contaminate the main CCLPG project with the lab-in-the-field experiment before the intervention was fully complete. For this reason I excluded from the original sample communities where we failed to install the project tubewell due to hydro-geological constraints (case (iv)). These cases are concentrated in one Union Parishad only, specifically in the South-Eastern region of Deuli Union. This characterization results in a non-homogeneous geographic distribution of treated and control communities from Deuli Union involved in the lab-in-the-field experiment, with control communities widespread in the whole Union area and treated communities mainly from its North-Western side. Since this non-homogeneous geographic distribution of treated and control communities in Deuli Union might bias the results, I pre-specified in the pre-analysis plan several robustness checks in order to deal address this concern.

5.2 Selection of participants

In each community we invite 42 people to participate in the project. In order to stratify the sample by gender and leadership status, I randomly select for this project 21 households among those interviewed during the CCLPG baseline household survey. Field staff invite one man and one woman per household, ensuring to invite overall 21 men and 21 women per experimental session. In order to invite, in each community 2 households reported as leader by other households in their community.

Invited households endogenously choose whether or not to take part to the experimental session, as well as the participating household member(s). In case one or two members from the household do not accept to participate, our field staff look for a replacement household/player within the same community, following a pre-determined (randomized) order that maintains the sample balance on gender and leadership status. In Table 3 I report the realized and planned sample stratification by

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12This also proved crucial in order to facilitate participation among women. However, we accommodate cases when only one member from the household accept to participate.

13Enumerators are instructed to invite household members that can actively participate to the experimental session and understand the rules of the different tasks, primarily the household head and his spouse.

14In order to maintain the desired balance between leader and non-leader households taking part in the experiment we instruct our enumerators to replace households within the same leadership status.
gender, leadership status and the equality/inequality experimental treatment.

The final sample of participants is determined by the households’ decision to accept our invitation as well as by each player’s final decision to actually take part to the experimental session. In Table 4 and 5 report the results from three pre-specified tests, showing that this self-selection into the lab-in-the-field experiment did not compromise the balance of the sample of participants in treated and control communities. In columns (1) and (3) of Table 4 I show that household characteristics do not vary between treated and control communities, considering first the final sample of players actually participating in the experimental session and then the sample of players successfully invited to the lab. In columns (2) and (4) of Table 4 I restrict the sample only to players assigned to the “Participation task”, that is the relevant sample for this project. The estimates reported in Table 5 indicate that the attrition rate from the experimental session does not significantly differ in treated and control communities, both for the full sample sample of players (columns (1) and (3)) and for players assigned to the “Participation task” (columns (2) and (4)). The overall evidence reported in Table 4 and 5 indicate that the self-selection process did not differ in treated and control communities, resulting in a final sample of players participating to the experimental session and assigned to the “Participation task” comparable across treatment statuses.

6 Value of participatory-decision making

The first set of results describes individual preferences for participatory decision-making, as measured within the lab-in-the-field experiment. Despite the widespread adoption of participatory development, the question of whether agents value collective decision-making rights, or instead the time costs of being involved in a participatory process and the social and psychological costs of exercising voice and decision rights prevail, has not been explored before.

Figure 1 shows the distribution of the WTP measure in my sample. Preferences are polarized on three main focal points, characterizing three types of agents. 26% of agents have an “absolute preference” for participatory decision-making: under any price condition, they prefer that decisions for their groups are determined through an open negotiation process rather than exogenously assigned. 24% of participants have a weak preference for participation (WTP = 0), choosing the participatory option over the “assigned distribution” alternative only at the 0 price condition, but not at positive prices. 22% of agents display a strong disfavor for participatory decision-making, being willing to forgo any offered compensation in order to avoid the next group bargaining round. Overall, the large majority of participants (71%) display at least a weak preference for retaining group decision rights in the last stage of the experiment (WTP ≥ 0), and 47% of them are willing to pay some positive amount for it (WTP > 0). This is in line with the consensus emerging from the behavioral literature, where several studies show that agents evaluate the decision process per se (Bolton et al., 2005), their voting rights (Güth and Weck-Hannemann, 1997), their autonomy and decision power (Fehr et al. (2013), Owens et al. (2014), Bartling et al. (2014), ?.

By design, the WTP range is constrained between +5 and -5 tokens, corresponding to +25 and -25 BDT, respectively a decrease/increase of 8% relative to the average daily income in rural Bangladeshi communities.15Despite these amounts are small in absolute terms, they represent the 25% of the average outcome from each group bargaining round, approximately equal to 20 tokens. The average WTP is 0.3 tokens, corresponding to the 2% of the expected outcome from the next group bargaining round, and 26% of players prefer to forgo 25% of their expected next group bargaining outcome in order to retain group decision rights.

Next, I make use of the belief elicitation procedure, which allows us to obtain explicit measures of the instrumental and intrinsic value of participatory decision-making. I follow Bartling et al. (2014)

15Approximately 300 BDT.
and define the instrumental value of decision rights as the expected outcome deriving from remaining in control of own decision, and the intrinsic value of decision rights as the utility beyond the instrumental value of providing the power to enforce preferred outcomes. I calculate the instrumental value of participatory decision-making as the difference in expected outcomes under the “participatory decision-making” option and the “assigned distribution” alternative. Within this framework, the WTP measure is interpreted as the sum of the instrumental and intrinsic value of participatory decision-making. Therefore, I obtain the intrinsic value of participatory decision-making by subtracting its instrumental value from the WTP measure. In Figure 2 I show the distribution of the instrumental and intrinsic value of participatory decision-making.

As guaranteed by the experimental design, the large majority of participants (71%) expect to receive the same outcome for the next group task under the “participatory decision-making” option and the “assigned distribution” alternative, while 11% of them expect to be penalized from retaining groups decision rights and 18% to benefit from the group discussion. The sample is significantly polarized, with a large share of participants preferring to take decisions for their group within a face-to-face inclusive negotiation, beyond instrumental considerations, but also a large share of agents for whom the time costs and psychological effort required by the group discussion dynamic prevail. I find evidence of both factors highlighted in Mansuri and Rao (2004) and Mansuri and Rao (2013): on the one hand beneficiaries seem to value being consulted and involved, and deliberative processes might create a sense of legitimacy for the resource allocation (Mansuri and Rao, 2013); on the other hand the exercise of voice and choice can be costly, for instance because of the monetary value of the time dedicated to participation, and the material/social costs when participation requires taking positions that are contrary to the interests of powerful groups (Mansuri and Rao, 2004). As shown in Alatas et al. (2012), these considerations have direct implications for the implementation of participatory programs, as the quality of the decisions taken during community meetings can be compromised by the extended effort and fatigue invested by participants in the process.

Figure 3 shows that preferences for participatory practices correlate with some demographic characteristics. Women and the elderly display a lower value for retaining group decision rights, while subjects with higher education or belonging to leader households seem to place an higher value on participation, although the coefficients are only marginally significant. This is in line with the positive self-selection of beneficiaries in community meetings often observed during the implementation of CDD programs. The disfavor of women and the elderly for participatory processes seems to be mainly driven by considerations related to time and psychological costs of being involved in face-to-face discussion dynamics, while leaders and those with higher education value participation mainly because of instrumental motives.

The estimates reported in Figure 4 suggest that the group dynamic and the quality of the negotiation process experienced in the previous round are also critical factors in shaping preferences for participatory decision-making. Factors representing the expected monetary benefits of the negotiation stage, such as higher individual outcome from the previous round or larger bargaining possibilities associated to the “Contribution task”, are positively related to the instrumental value of participatory decision-making. The intrinsic value of participatory decision-making instead is mainly related to the time and psychological costs of entering the next group bargaining stage. For instance, it is higher for the first group task, when participants did not invest yet much time and mental energies in the experimental session, and for good bargainers, plausibly because for them the face-to-face negotiation does not require high effort and the group tasks represent an enjoyable activity. Interestingly, the inequality in the distribution of outcomes realized in the previous round is positively related with the instrumental value of participatory decision-making, but negatively with its intrinsic value. One plausible interpretation of this result is that on the one hand subjects expects to be able to obtain larger gains from the group discussion dynamics if they experiences larger inequality in the previous round. But on the other hand inequality does not seem to be the social norm in the sample (Ghisolfi,
2018), explaining the negative intrinsic value that subjects place on participatory practices that might lead to high final inequality.

7 CDD program and value of participatory-decision making

The empirical analysis is based on the pre-analysis plan submitted to the AEA-RCT registry. In the result tables I specify whether each estimated model was included or not in the pre-analysis plan, and I will discuss where I depart from it.

7.1 Main treatment effect

In Table 6, I report the main treatment effect. The exposure to our CDD intervention has the effect of significantly increasing the value that subjects attach to participatory decision-making. This effect represents an increase of 3% of the WTP relative to the expected group bargaining outcome, and an increase of 1% of the WTP relative to the average daily income in rural Bangladesh. Because of the peculiar distribution of the WTP measure, in columns (3)-(6) I extend the analysis specified in the pre-analysis plan in order to assess whether this effect is mainly driven by a shift in one specific part of the distribution. The estimates indicate that the main effect is primarily driven by an increase in the share of participants with an “absolute preference” for participatory decision making.

As shown in Table 7, the main treatment effect does not vary significantly across socio-economic groups. Despite CDD programs are often promoted as a way to empower the more marginalized groups in the society (women, non-elites, the poorer), my results does not support this view. One explanation might be that the implementation of CDD interventions necessarily interacts with the existing social structure in receiving communities. In the context of our CDD program carried out in rural Bangladesh, despite a strong commitment to guarantee to all community members equal voice and decision rights, women rarely play an active role in the discussion and the decision-making process is often polarized by few influential persons. These dynamics might explain why the treatment effect is not significantly larger for those social groups specifically targeted with our program.

7.2 Mechanisms

In Table 8, I make use of the belief elicitation procedure in order to obtain explicit measures of the instrumental and intrinsic value of participatory decision-making. I follow Bartling et al. (2014) and define the instrumental value of decision rights as the expected outcome deriving from remaining in control of own decision, and the intrinsic value of decision rights as the utility beyond the instrumental value of providing the power to enforce preferred outcomes. I calculate the instrumental value of participatory decision-making as the difference in expected outcomes under the “participatory decision-making” option and the “assigned distribution” alternative. Within this framework, the WTP measure is interpreted as the sum of the instrumental and intrinsic value of participatory decision-making. Therefore, I obtain the intrinsic value of participatory decision-making by subtracting its instrumental value from the WTP measure:

\[
WTP_{PDM} = \frac{Expected \ payoff_{PDM} - Expected \ payoff_{AD} + Intrinsic \ value_{PDM} - Intrinsic \ value_{AD}}{Instrumental \ value \ of \ PDM \ vs \ AD}
\]

The estimates reported in Table 8 indicate that agents in treated communities have less optimistic expectations on the benefits from participatory decision-making. The main positive effect of our CDD

\[16\] AEA RCT registration: AEARCTR-0001809.
program on the WTP for participatory decision-making is primarily driven by the increase in the intrinsic value of participatory practices in treated communities.

These considerations are further confirmed by the results presented in Table 9. The negotiation stage, if anything, delivers worse outcomes in treated communities, for instance in terms of inequality in the final distribution of benefits from the group task or the total contributions raised in the “Contribution task”. These findings are consistent with the estimated decrease in the instrumental value of participatory decision-making reported in Table 8. The average bargaining time is also similar in treated and control communities, and overall these results indicate that our CDD program did not improve the effectiveness and efficiency of the group discussion. However, it did decrease the risk of conflicts within the group discussion. This result suggests that the positive effect of the CDD intervention on the the intrinsic value of participatory decision-making (Table 8) is partly driven by a reduction of the psychological costs and efforts associated to a face-to-face group discussion dynamic.

7.3 Robustness checks

In Appendix B, I show that the main results is robust to several robustness checks. First, I verify that the main findings are robust to the non-random sample selection of communities in the lab-in-the-field experiment. The first concern is related to the initial exclusion from the optimal sample of communities where the CCLPG program failed endogenously,\(^{17}\) and their ex-post inclusion to the sample obtained via the optimization procedure described in Section 5.1 and in Appendix A. Both excluding or including the communities where the project failed endogenously from the optimal sample would bias the results, most likely in opposite directions. In my favorite specifications I use the full sample with weights that take into account the ex-ante probability of each community to be selected in the optimal sample.\(^{18}\) In Table 13, I compare the main estimates with two natural robustness checks, including and excluding from the final sample the four communities where the CCLPG project failed endogenously and originally considered not eligible for the lab-in-the-field experiment. As expected, the main coefficient of interest is downward biased when these communities are included in the sample without the weight correction: in these cases the implementation of the CCLPG program was problematic, it raised problems and conflicts in the community, and ultimately we failed to deliver the intervention. It is therefore reasonable to expect targeted beneficiaries living in these communities to be skeptical about participatory decision-making approaches, as they mostly experienced the costs but not the benefits potentially associated to them. Similarly, I estimate a larger treatment effect when I exclude from the final sample these communities where the CCLPG project failed endogenously. These differences are marginal and go in the expected directions, supporting the choice of use weighted regressions as favorite specifications.

The second concern relates to the exclusion of communities where we were not able to deliver the CCLPG intervention due to hydro-geological constraints in Deuli Union. Installation failures are unlikely to be correlated with our main outcome variables, nor with the CCLPG treatment assignment, which is random by design. However, they are a function of geography: treated communities where installations failed due to hydro-geological constraints are mainly concentrated in the South-Eastern side of Deuli Union. As a result, control and treated communities selected for the lab-in-the-field

\(^{17}\)Originally, I considered ineligible for this project four communities where the project failed endogenously: (i) one where the community was not interested in holding the meeting; (ii) two where the community did not reach an agreement during the community meetings; (iii) one where installation failed for one tubewell and cash contributions failed for the other tubewell. I excluded TUs where the project failed “endogenously” because at that stage, in agreement with the field team, I considered unfeasible to conduct the lab-in-the-field experiment in communities where the project failed due to tensions and disagreements within the community or lack of interest in the CCLPG program. Although aware that this selection might bias our estimates, this choice was imposed by feasibility constraints.

\(^{18}\)In order to derive the weights I repeat the optimization procedure 1,000 times on the full sample of communities in the CCLPG program, and I calculate the probability of each community to be included in the optimal sample.
experiment are not equally distributed in the area: treated communities are mainly from the North-Western side of Deuli Union, while control communities are homogeneously spread in the area. In Table 13, I compare the results from my favorite specification with the estimates obtained by excluding Deuli Union, the only strata where we experienced issues in the implementation of the project due to hydro-geological factors. The main findings are robust to the exclusion of this strata and, if anything, the results are stronger and more significant.

The third concern arises from the optimization procedure adopted in order to identify the sample of communities where to implement the lab-in-the-field experiment, described in details in Section 5.1 and in Appendix A. The main rationale for this non-random sample selection is small sample bias reduction, a valid concern posed by the sample size consisting in less than one hundred communities. In order to correct inference, I obtain bootstrapped standard errors by implementing a two-step bootstrapping procedure that replicates the optimization procedure for sample selection (Appendix A). I obtain $B=350$ “optimal bootstrapped samples”, which I use to obtain bootstrapped standard errors of the main coefficient of interest. Each “optimal bootstrapped sample” is obtained from $K=1,000$ samples, bootstrapped at community level by Union Parishad and treatment status, by selecting the one with the highest p value from the F-test on the balance of pre-intervention observables between treated and control villages. As the bootstrapped standard errors for the main coefficient of interest are smaller (Table 14), in my favorite specification and main analysis I report the most conservative specification with unadjusted standard errors.

Finally, Table 15 confirms that the coefficient of interest is robust to the inclusion of different sets of controls, including optimal sets of controls as identified by Lasso algorithms. Since both the magnitude and the significance of the main coefficient of interest show minimal variations when controls are included in the main specification, I do exclude covariates from my favorite specification and main analysis.

8 Conclusions

In this paper I evaluate the impact of a CDD program on democratic values and practices in receiving communities. Specifically, I focus on a novel measure of procedural utility measured in a lab setting: individual preferences on the process to take common interest decisions.

The first set of empirical results indicate that the majority of citizens (weakly) prefer taking common decisions via democratic and inclusive institutions. However, participation in the decision-making process is selected, with women and the elderly less likely to engage into public consultations while leaders and more educated agents place an higher value on participation. Preferences are driven by instrumental and non-instrumental considerations, and are influenced by the outcomes and the quality of similar decision-making processes already experienced by agents.

The results from the policy evaluation analysis indicate that the value of participatory decision-making increases with exposure to our CDD program. The overall effect is driven primarily by an increase in the intrinsic value of participation in response to our CDD program, as subjects in treated communities have lower expectations of the instrumental gains of participation. This suggests that the exposure to participatory governance has an impact on the value that citizens attach to inclusive decision-making practices per se, above and beyond instrumental considerations.

This evidence complements the results by Fearon et al. (2015) and Beath et al. (2013), that stress that, even in case new inclusive and effective institutions are available to communities, it remains unclear whether and under which conditions they will choose to make use of them endogenously instead of relying on traditional pre-existing institutions. My findings support a more optimistic view on the potential of spillover effects from development interventions to social norms and preferences for civic participation, and they encourage initiatives from governments and international organizations aimed at promoting community participation and decentralization reform. These results also provide
interesting avenues for future research on the formation and development of norms and institutions, suggesting that institutions are persistent despite individual preferences and values do respond to exogenous shocks, such as the exposure to democratic and inclusive decision-making processes.

A remaining open question is whether these findings would extend outside the lab-in-the-field setting and hold also in a real world context where agents can choose their most favored decision-making process for solving a real world collective action problem. We are currently conducting a follow up study designed in order to answer this question, based on a field experiment that will allow us to elicit individual willingness to pay for a participatory decision-making process in relation to the provision of a real local public good.
References


9 Figures

Figure 1: Distribution of WTP for participatory decision-making

Figure 2: Instrumental and intrinsic value for participatory decision-making
Figure 3: Regression coefficients for WTP, instrumental and intrinsic value of participation

Figure 4: Regression coefficients for WTP, instrumental and intrinsic value of participation
10 Tables

Table 3: Sample stratification for players in the “Participation tasks”

<table>
<thead>
<tr>
<th></th>
<th>Women</th>
<th></th>
<th>Men</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equality</td>
<td>Inequality</td>
<td>Equality</td>
<td>Inequality</td>
<td></td>
</tr>
<tr>
<td>Players in the “Participation task”</td>
<td>288</td>
<td>288</td>
<td>288</td>
<td>288</td>
<td>1152</td>
</tr>
<tr>
<td>Players in the “Participation task” from a leader household (planned)</td>
<td>48(96)</td>
<td>97(96)</td>
<td>86(96)</td>
<td>94(96)</td>
<td>325(384)</td>
</tr>
</tbody>
</table>

Table 4: Sample balance

<table>
<thead>
<tr>
<th>Dependent variable: Treated</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of bacteria contaminated hhs</td>
<td>-0.06*</td>
<td>-0.05</td>
<td>-0.06</td>
<td>-0.05</td>
</tr>
<tr>
<td>Share of arsenic contaminated hhs</td>
<td>0.00</td>
<td>-0.00</td>
<td>0.00</td>
<td>-0.00</td>
</tr>
<tr>
<td>Poverty score - 2 USD</td>
<td>-0.00</td>
<td>0.00</td>
<td>-0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Network size (number of nominations received)</td>
<td>-0.01</td>
<td>-0.03</td>
<td>-0.01</td>
<td>-0.03</td>
</tr>
<tr>
<td>Network size (number of nominated hhs)</td>
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<td>0.04*</td>
<td>0.03</td>
<td>0.04*</td>
</tr>
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<td>Leader household</td>
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<td>-0.03</td>
<td>-0.03</td>
<td>-0.02</td>
</tr>
<tr>
<td>Share of not educated people in the household</td>
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<td>0.06</td>
<td>0.12*</td>
<td>0.06</td>
</tr>
<tr>
<td>Literacy rate in the household</td>
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<td>0.02</td>
<td>0.11*</td>
<td>0.05</td>
</tr>
<tr>
<td>Household size</td>
<td>-0.00</td>
<td>0.01</td>
<td>-0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Muslim household</td>
<td>-0.06</td>
<td>-0.01</td>
<td>-0.06</td>
<td>-0.01</td>
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<tr>
<td>Decision on a new public safe water source - unanimity</td>
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<td>0.03</td>
<td>-0.05</td>
<td>0.03</td>
</tr>
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<td>Decision on a new public safe water source - majority</td>
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<td>-0.01</td>
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<td>0.00</td>
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<td>Decision on a new public safe water source - government</td>
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<td>-0.15*</td>
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<td>0.07</td>
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<td>0.14**</td>
<td>0.06</td>
<td>0.14**</td>
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<tr>
<td>WTP (cash) for new public safe WS in most preferred location</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>WTP (cash) for new public safe WS in socially optimal location</td>
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<td>-0.00</td>
<td>0.00</td>
<td>-0.00</td>
</tr>
<tr>
<td>WTP (time) for new public safe WS in most preferred location</td>
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<td>-0.00</td>
<td>-0.00</td>
<td>-0.00</td>
</tr>
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<td>F-test (pvalue)</td>
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<td>0.452</td>
<td>0.130</td>
<td>0.477</td>
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<tr>
<td>Union FE</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Player sample</td>
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<td>Final</td>
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<td>Accepted</td>
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<td>Participation task only</td>
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<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Pre-specified</td>
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<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>N</td>
<td>3208</td>
<td>1054</td>
<td>3358</td>
<td>1105</td>
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### Table 5: Attrition from the lab-in-the-field experiment

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<th>(3)</th>
<th>(4)</th>
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<tbody>
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<td>Treated</td>
<td>0.01</td>
<td>-0.01</td>
<td>0.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>(0.01)</td>
<td>(0.02)</td>
<td>(0.01)</td>
<td>(0.02)</td>
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</tr>
<tr>
<td>Attrition rate</td>
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<td>0.05</td>
<td>0.06</td>
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<td>Union FE</td>
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<td>Yes</td>
<td>Yes</td>
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<td>Controls</td>
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<td>Yes</td>
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<td>Participation task only</td>
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<td>Yes</td>
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<td>Pre-specified</td>
<td>Yes</td>
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<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>N</td>
<td>3374</td>
<td>1127</td>
<td>3323</td>
<td>1105</td>
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### Table 6: Main treatment effect

<table>
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<th>WTP ≥ 0 Alway participate</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
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<tr>
<td>Treated</td>
<td>0.58**</td>
<td>0.04</td>
<td>0.10***</td>
</tr>
<tr>
<td>(0.27)</td>
<td>(0.03)</td>
<td>(0.03)</td>
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</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.007</td>
<td>0.011</td>
<td>0.012</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
<td>2304</td>
<td>2304</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection.

### Table 7: Heterogeneous treatment effects

<table>
<thead>
<tr>
<th>WTP</th>
<th>Always participate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td>Treated</td>
<td>0.47</td>
</tr>
<tr>
<td>(0.20)</td>
<td>(0.30)</td>
</tr>
<tr>
<td>Treated*Female</td>
<td>0.23</td>
</tr>
<tr>
<td>(0.41)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>Treated*Leader HH</td>
<td>0.57</td>
</tr>
<tr>
<td>(0.47)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Treated*Network size</td>
<td>0.16</td>
</tr>
<tr>
<td>(0.17)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Treated*Poverty score</td>
<td>-0.01</td>
</tr>
<tr>
<td>(0.01)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.008</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection.
Table 8: Treatment effect on instrumental and intrinsic value of participatory decision-making

<table>
<thead>
<tr>
<th></th>
<th>WTP</th>
<th>Instrumental value</th>
<th>Intrinsic value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Treated</td>
<td>0.58**</td>
<td>-0.52**</td>
<td>1.10***</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(0.21)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
<td>2304</td>
<td>2304</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection.

Table 9: Mechanisms

<table>
<thead>
<tr>
<th></th>
<th>Inequality</th>
<th>Total contributions</th>
<th>Bargaining time</th>
<th>Tense bargaining</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Treated</td>
<td>0.01</td>
<td>-0.94</td>
<td>3.43</td>
<td>-0.05**</td>
</tr>
<tr>
<td></td>
<td>(0.01)</td>
<td>(0.64)</td>
<td>(8.36)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Contribution task only</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.011</td>
<td>0.009</td>
<td>0.009</td>
<td>0.010</td>
</tr>
<tr>
<td>N</td>
<td>2302</td>
<td>1152</td>
<td>2304</td>
<td>2304</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection.
A Appendix: Selection of control and treated villages

Within the CCLPG project, treated villages are further randomly assigned to different contribution requirements in terms of co-funding the project: (i) cash contribution; (ii) labour contribution; (iii) waiver. By design of the CCLPG project, 1/4 of communities are in the control group and 3/4 in the treated group (Table 10).

According to the initial design, selected for the lab-in-the-field experiment 92 communities: 35 from the control group and 57 from the treated group, evenly distributed across treatment arms (Table 11).

Table 10: Sample size for the CCLPG program

<table>
<thead>
<tr>
<th>Union name</th>
<th>Control</th>
<th>Cash</th>
<th>Labour</th>
<th>Waiver</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deuli</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>8</td>
<td>31</td>
</tr>
<tr>
<td>Saidpur</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>38</td>
</tr>
<tr>
<td>Bahua</td>
<td>4</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Mokamtala</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>36</td>
</tr>
<tr>
<td>Shibgonj</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Maidanhata</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Roynagar</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Kichak</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>39</strong></td>
<td><strong>39</strong></td>
<td><strong>39</strong></td>
<td><strong>155</strong></td>
</tr>
</tbody>
</table>

Table 11: Sample size for lab-in-the-field experiment

<table>
<thead>
<tr>
<th>Union name</th>
<th>Control</th>
<th>Cash</th>
<th>Labour</th>
<th>Waiver</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deuli</td>
<td>5</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>Saidpur</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>25</td>
</tr>
<tr>
<td>Bahua</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Mokamtala</td>
<td>9</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>24</td>
</tr>
<tr>
<td>Shibgonj</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Maidanhata</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Roynagar</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Kichak</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>35</strong></td>
<td><strong>19</strong></td>
<td><strong>19</strong></td>
<td><strong>19</strong></td>
<td><strong>92</strong></td>
</tr>
</tbody>
</table>

Originally, I considered ineligible for this project nine communities: (i) one where the community was not interested in holding the meeting; (ii) two where the community did not reach an agreement during the community meetings; (iii) one where installation failed for one tubewell and cash contributions failed for the other tubewell; (iv) five communities in Deuli Union where installations failed due to hydro-geological reasons.

Among eligible communities, I select the ones where to conduct the lab-in-the-field experiment in order to maximize the balance between the treatment and control group on a set of pre-intervention observables. I reiterate 1,000 times a random sampling procedure stratified by Union Parishad, and I implement the one with the highest p-value from the F-test on the balance of pre-intervention observables between treated and control villages. We test the balance between the treatment and control group on the following set of pre-intervention observables, aggregated at village level:

- village size;
- number of clusters;
- share of arsenic contaminated water sources;
- share of bacteria contaminated water sources;
- number of offered water sources if treated;
- average poverty score (2$ poverty line);\(^{19}\)
- average willingness to take part to a collective action for the construction of a new public water source;
- share of households reporting that the decision on the construction of a new public water source in their village should be taken by unanimity;
- share of households reporting that the decision on the construction of a new public water source in their village should be taken by majority;
- share of households reporting that the decision on the construction of a new public water source in their village should be taken by the government;
- share of households reporting that the decision on the construction of a new public water source in their village should be taken by village leaders;
- average self-reported willingness to pay (cash) for a new public water source in own's favourite location;
- average self-reported willingness to pay (cash) for a new public water source in the best location for the community;
- average self-reported willingness to pay (time) for a new public water source the in best location for the community;
- average network size;
- number of leader households;
- distance to the closest pharmacy;
- distance to the closest health clinic;
- share of villagers with no education;
- literacy rate.

As performed in date December 2, 2016, the best random sample has F-test with p-value equal to 0.96.

As I reconsidered the sample selection in February 2017, I added the four communities in categories (i)-(iii) to the original sample of 92 communities selected via the optimization algorithm. In Table 12 I test for balance in the final sample of 96 communities, reporting the p-values from pairwise t-tests between the control and treated groups for the set of pre-intervention observables used to identify the optimal random sample.

\(^{19}\)The poverty score is the Progress out of Poverty Index (PPI), which uses answers to simple questions about a household's characteristics and asset ownership in order to compute the likelihood that the household is living below 2$ poverty line. We refer here to the construction of the PPI for Bangladesh. Further references can be found here: http://www.progressoutofpoverty.org/.
Table 12: Balance tests of covariates between treatment and control group

<table>
<thead>
<tr>
<th></th>
<th>Control group - Mean [s.e.]</th>
<th>Treated group - Mean [s.e.]</th>
<th>p-value</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of clusters</td>
<td>1.10 (0.31)</td>
<td>1.31 (0.29)</td>
<td>0.315</td>
<td>96</td>
</tr>
<tr>
<td>Average household size</td>
<td>3.95 (0.09)</td>
<td>3.91 (0.09)</td>
<td>0.550</td>
<td>96</td>
</tr>
<tr>
<td>Number of anchors</td>
<td>1.11 (0.15)</td>
<td>1.18 (0.14)</td>
<td>0.528</td>
<td>96</td>
</tr>
<tr>
<td>Average poverty score - 2 USD</td>
<td>81.51 (2.30)</td>
<td>80.97 (2.17)</td>
<td>0.737</td>
<td>96</td>
</tr>
<tr>
<td>Participation to a collective action to provide a new public safe water source</td>
<td>0.98 (0.01)</td>
<td>0.97 (0.01)</td>
<td>0.323</td>
<td>96</td>
</tr>
<tr>
<td>Decision on a new public safe water source - unanimity</td>
<td>0.77 (0.04)</td>
<td>0.73 (0.04)</td>
<td>0.682</td>
<td>96</td>
</tr>
<tr>
<td>Decision on a new public safe water source - majority</td>
<td>0.42 (0.04)</td>
<td>0.43 (0.04)</td>
<td>0.368</td>
<td>96</td>
</tr>
<tr>
<td>Decision on a new public safe water source - government</td>
<td>0.00 (0.03)</td>
<td>0.00 (0.03)</td>
<td>0.399</td>
<td>96</td>
</tr>
<tr>
<td>Decision on a new public safe water source - village leaders</td>
<td>0.23 (0.06)</td>
<td>0.27 (0.06)</td>
<td>0.245</td>
<td>96</td>
</tr>
<tr>
<td>Decision on a new public safe water source - ngo</td>
<td>0.17 (0.06)</td>
<td>0.22 (0.06)</td>
<td>0.203</td>
<td>96</td>
</tr>
<tr>
<td>WTP (cash) for installation of a new public safe water source in most preferred</td>
<td>247.49 (34.94)</td>
<td>252.97 (32.95)</td>
<td>0.821</td>
<td>96</td>
</tr>
<tr>
<td>WTP (cash) for installation of a new public safe water source in location serving</td>
<td>104.49 (16.49)</td>
<td>110.49 (15.51)</td>
<td>0.690</td>
<td>96</td>
</tr>
<tr>
<td>WTP (time) for installation of a new public safe water source in most preferred</td>
<td>10.37 (4.39)</td>
<td>8.90 (4.14)</td>
<td>0.627</td>
<td>96</td>
</tr>
<tr>
<td>Share of bacteria contaminated water sources</td>
<td>0.57 (0.04)</td>
<td>0.56 (0.04)</td>
<td>0.687</td>
<td>96</td>
</tr>
<tr>
<td>Share of arsenic contaminated water sources</td>
<td>0.68 (0.07)</td>
<td>0.73 (0.07)</td>
<td>0.392</td>
<td>96</td>
</tr>
<tr>
<td>TU size</td>
<td>117.35 (17.87)</td>
<td>125.40 (16.85)</td>
<td>0.516</td>
<td>96</td>
</tr>
<tr>
<td>Average network size</td>
<td>2.76 (0.13)</td>
<td>2.86 (0.13)</td>
<td>0.270</td>
<td>96</td>
</tr>
<tr>
<td>Number of leaders</td>
<td>2.69 (0.12)</td>
<td>2.70 (0.12)</td>
<td>0.852</td>
<td>96</td>
</tr>
<tr>
<td>Distance to the closest pharmacy [min]</td>
<td>18.82 (1.93)</td>
<td>18.84 (1.82)</td>
<td>0.988</td>
<td>96</td>
</tr>
<tr>
<td>Distance to the closest health clinic [min]</td>
<td>26.81 (2.70)</td>
<td>26.65 (2.54)</td>
<td>0.934</td>
<td>96</td>
</tr>
<tr>
<td>Share of not educated people</td>
<td>0.33 (0.03)</td>
<td>0.33 (0.03)</td>
<td>0.330</td>
<td>96</td>
</tr>
<tr>
<td>Literacy rate</td>
<td>0.57 (0.03)</td>
<td>0.57 (0.03)</td>
<td>0.677</td>
<td>96</td>
</tr>
</tbody>
</table>

Note: Standard errors are shown in parentheses. Column 4 reports the p-values from pairwise tests of the mean difference between treatment and control group, from a regression of the outcome variable on indicators for the two groups (with Union fixed effects and no constant).
B Appendix: Robustness checks

Table 13: Robustness checks: sample weights and endogenous/exogenous failures

<table>
<thead>
<tr>
<th>Dependent variable: WTP</th>
<th>Full sample weighted</th>
<th>Full sample unweighted</th>
<th>Drop endogenous failures</th>
<th>Drop exogenous failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated</td>
<td>(1) 0.58** (0.27)</td>
<td>(2) 0.50* (0.26)</td>
<td>(3) 0.61** (0.26)</td>
<td>(4) 0.62** (0.28)</td>
</tr>
<tr>
<td>Full sample</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Weighted</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.007</td>
<td>0.007</td>
<td>0.009</td>
<td>0.008</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
<td>2304</td>
<td>2208</td>
<td>1992</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level.

Table 14: Robustness checks: correcting inference

<table>
<thead>
<tr>
<th>Dependent variable: WTP</th>
<th>Full sample unweighted</th>
<th>Drop endogenous failures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated</td>
<td>(1) 0.5** (0.26)</td>
<td>(2) 0.5*** (0.15)</td>
</tr>
<tr>
<td>Bootstrapped S.E</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Full sample</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Weighted</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
<td>2304</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection. Bootstrapped standard errors are obtained from $B = 350$ "optimal samples". Each “optimal sample” is obtained from $K = 1000$ samples bootstrapped by Union Parishad and treatment status.
Table 15: Robustness checks: controls

<table>
<thead>
<tr>
<th>Dependent variable: WTP</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated</td>
<td>0.58**</td>
<td>0.47*</td>
<td>0.55*</td>
<td>0.52*</td>
<td>0.60**</td>
<td>0.54*</td>
<td>0.53*</td>
</tr>
<tr>
<td>(0.27)</td>
<td>(0.28)</td>
<td>(0.28)</td>
<td>(0.27)</td>
<td>(0.27)</td>
<td>(0.28)</td>
<td>(0.28)</td>
<td></td>
</tr>
<tr>
<td>Union FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Controls</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Enumerator FE</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>In Lasso</td>
<td>In Lasso</td>
</tr>
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<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Pre-specified</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.007</td>
<td>0.019</td>
<td>0.081</td>
<td>0.022</td>
<td>0.081</td>
<td>0.086</td>
<td>0.091</td>
</tr>
<tr>
<td>N</td>
<td>2304</td>
<td>2108</td>
<td>2108</td>
<td>2090</td>
<td>2090</td>
<td>2132</td>
<td>2128</td>
</tr>
</tbody>
</table>

Notes: Standard errors clustered at community level. Regressions weighted by the probability of each village to be selected by the optimization procedure for sample selection. In model (3) I include the treatment status variable in the set of possible controls evaluated by the Lasso algorithm. In model (4) I force the treatment status variable to be included in all regressions considered by the Lasso algorithm. In both models (3) and (4) I impose Union fixed effects to be included in all regressions evaluated, excluding them from the set of possible controls evaluated by the Lasso algorithm.
C Appendix: Invitation of participants, informed consent and individual survey before the experimental session

C.1 Introduction of the project to the community

We are working for a NGO called NGO Forum for Public Health, and collaborating with researchers from Stockholm University, Sweden.

NGO Forum is conducting an arsenic mitigation program in the region. As part of that project, some months ago we tested for bacteria and arsenic all sources of drinking water in this village. Moreover, we conducted an interview with some households in this village. Remind the community people about the project and the treatment status of the village, and the progress of the project.

We now selected your village for another related project, which is called “Community Decision Making Project”. The aim of this new project is to study how communities take decisions in rural Bangladesh.

What we learn from this study will help us and other organizations to improve the design of programs, like the arsenic mitigation program we are conducting in this region. This may help other communities like your own.

We randomly selected 21 households for this project, and we will invite one man and one woman per household to participate to an experimental session. Their tasks will take approximately 4-5 hours, and we will compensate participants for their time.

C.2 Invitation of participants

We are working for a NGO called NGO Forum for Public Health, and collaborating with researchers from Stockholm University.

NGO Forum is conducting an arsenic mitigation program in the region. As part of that project, some months ago we tested for bacteria and arsenic all sources of drinking water in this village. Moreover, we conducted an interview with some households in this village. We now selected your village for another related project.

We conducted a public lottery in order to decide which villages were going to receive the intervention and the possibility to construct a new public source of safe water.

Control villages: Your village was assigned to the control group, however, we are working in other nearby villages in your union in order to provide access to safe water.

Treated villages: Your village was assigned to the treatment group. We already conducted in your village the community meeting, where your community decided on where to build the new source of safe drinking water.

C.3 Informed consent

You have been asked to participate in a research study conducted by Serena Cacciolo and Selene Ghisolfi from the Institute for International Economic Studies, Stockholm University, in cooperation
with NGO Forum. The purpose of the study is to learn about how groups of people who live in communities like yours take decisions.

The study is composed of an interview today and participation in an experimental session tomorrow. We expect that the interview today will take about 15 minutes, and the experimental session tomorrow will last for 4 to 5 hours. During the experimental session tomorrow you will be asked to take part in three decision-making exercises with other people from your village. Tomorrow we will explain in details the rules of the tasks you will take part in.

You were randomly selected as a possible participant in this study given your household has been previously interviewed for a related project conducted in your village on arsenic mitigation in rural Bangladesh. Please consider the following information before deciding if you consent to participate in this study:

- Participation to this study is voluntary. You have the right not to answer any question, and to stop the interview at any time or for any reason, or to leave the experimental session at any point in time.

- You will be compensated for the participation in this study. At the end of the experimental session tomorrow you will receive a payment which depends on your decisions during group exercises, and we will explain the details of it tomorrow. You can expect to receive between 200 and 400 BDT. The risks associated with this study are minimal.

- The information we will collect during interviews and during the experimental session will be confidential. We will take very good care of your information and no one who is not connected with the project will have access to your personal information, like your name. We will only use your personal information, like your name, in carrying out this project, and if we use information from the survey in the future we will remove your name and change your location so that no one can recognize you.

- We would like to record the experimental session. We will not record the session if you do not grant permission for doing it. You have the right to revoke recording permission at any time.

This project will be completed by April 2017. All interview recordings will be stored in a secure work space until 1 year after that date. The tapes will then be destroyed.

Do you understand the procedures described above? Did I answer your questions to your satisfaction? Do you consent to participate in this study? Do you give permission for the experimental session to be recorded?

C.4 Individual survey

Script for questionnaire introduction:
“In the next questions we will ask you some questions about your preferences and opinion. There will be no correct answer! We are only interested in what are your personal preferences and opinions. So you can feel free to give us your true answers.”

- Think about situations when your household have to take a decision about an important purchase (e.g. furniture). Are you usually involved in these kind of major decisions for the household? Options: I decide alone; I am involved in the decision; I am not involved in the decision; Don’t know; Refused to answer.
• Please tell me how much you agree with the following statement: “Generally speaking, most people can be trusted.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• Please tell me how much you agree with the following statement: “In life, people are rewarded for their efforts.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• Now I will briefly describe some people. Please indicate for each description whether that person is very much like you, somewhat like you, not like you, or not at all like you: “This person is very careful in trying to avoid risks. For instance, when taking farming decisions (men), when cooking (women), when deciding about health, when in traffic, etc.”
Options: Very much like me; Like me; Not like me; Not at all like me; Don’t know; Refused to answer.

• Now I will briefly describe some people. Please indicate for each description whether that person is very much like you, somewhat like you, not like you, or not at all like you: “It is important for this person to help the people nearby, to care for their well-being.”
Options: Very much like me; Like me; Not like me; Not at all like me; Don’t know; Refused to answer.

• Now I will briefly describe some people. Please indicate for each description whether that person is very much like you, somewhat like you, not like you, or not at all like you: “This person is very good in negotiating with other people: he/she is not afraid about expressing his/her opinion, even when in disagreement with other people, and he/she is able to express his/her own opinion in a convincing way, and he/she is often able to make other people reconsider their position.”
Options: Very much like me; Like me; Not like me; Not at all like me; Don’t know; Refused to answer.

• Please state whether you agree or disagree with the following statements about an hypothetical construction of a public infrastructure, for instance a mosque/temple: “The richest people in the village should pay more of the cost of the construction.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• Please indicate whether you agree or not with the following statement: “If there was a village meeting in order to decide about an issue in my community (e.g. building a new road, school, temple/mosque, tubewell, etc), I would participate in the village meeting.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• Please indicate whether you agree or not with the following statement: “I think people should have a say about decisions regarding their community.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• Please indicate whether you agree or not with the following statement: “If someone does me a favour, I am prepared to return it.”
Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.
• Please indicate whether you agree or not with the following statement: “If somebody puts me in a difficult position, I will do the same to him/her.”
  Options: Strongly agree; Agree; Neither agree nor disagree; Disagree Strongly disagree; Don’t know; Refused to answer.

• We have paired you with another person in your village. You do not know the identity of this person, and the other person does not know your identity. I am gifting you 50 BDT. The other person does not know about it. If you wish, you can send part of your 50 BDT to this person. In any case, the other person will never know your identity nor your choice. If you decide to gift any of the 50 BDT to this person, she will receive it tomorrow, together with the reward from the experimental session. Equally, you will receive the amount you decide to keep tomorrow, together with the reward from the experimental session. Please tell me now how many takas you wish to keep out of the 50 BDT.
  Answer: report integer.
D Appendix: Scripts for the experimental session

D.1 General introduction to the lab

Welcome everybody and thank you for coming.

This experiment is conducted by researchers from Stockholm University in cooperation with NGO Forum. NGO Forum is conducting in this region a related project in order to provide safe drinking water to communities in this region highly affected by arsenic.

We conduct this experiment in order to study how communities take decisions in rural Bangladesh. The results from this study will help to develop policies that can better serve rural villages.

This experimental session will last around 3 hours and you are going to complete 3 different tasks. At the end you will receive a reward, which will depend on the decisions taken by yourself and your group peers during all the 3 exercises.

You will complete each task in groups. The groups will be different for each task. At the beginning of each exercises we will describe exactly your task. Everything contained in these instructions and everything you hear in this session is an accurate representation of this experiment. Be sure to ask any questions that you may have during this instruction period, and ask for assistance, if needed, at any time.

You will complete the tasks using tokens. At the end of each round we will record how many tokens you have gained. The more tokens you have earned, the higher will be your final reward.

Each token will be exchanged for 5 takas. We will also reward your participation with a constant show-up fee of 30 takas.

You will be involved in three group tasks.

For the first two exercises, you will first complete a TRIAL round to familiarize with the rules, and the you will complete the REAL round. Only the REAL round will count to determine your final reward. You will complete the third task only once, without TRIAL.

At the end of the session, we will reward all participants according to the sum of tokens you obtained for each task. In order to maximize your winnings, remember to complete each task at your best throughout the whole session!

Throughout the experiment we will use lotteries in order to guarantee the fairness of the experiment for all participants. All the relevant steps are clearly documented, and follow scientific and academic standards. None of these procedures is related to gambling.

You are required to keep a tidy and calm behaviour. Any misbehaviour will be punished with the exclusion from the project and you will not receive any reward. You are explicitly not allowed to:

- Make physical threats of any kind or verbally abuse other players;
- Steal or hide tokens from your group or from the other group members;
- Remove, exchange or lose your ID codes;
- Suggest how to play to people outside your group;
- Agree to share compensations after the experiment;
- Ask other participants how much they have earned when the experiment has ended.

D.2 Contribution task

In this exercise you will start with a number of tokens of your property. You will extract a color, and your tokens will be of that color. The extracted color determines your number of initial tokens and you cannot change it. You will be assigned the same number of tokens in the TRIAL and in the REAL round. Each token has the exact same value, regardless of the color. We will also distribute 30 white tokens.

We will also distribute a timer per group.

Please do not touch the tokens nor the timer until we give you the start.

[Enumerators distribute individual and group tokens. Enumerators distribute the timers and explain how to operate it.]

Imagine now that the marked central area represents a common project you can undertake together with your group mates. Investing money in this common project results in doubling your investment. Your aim is to decide how much of your colored tokens you want to invest in this common project, and simultaneously how to divide among your group the whole amount of the project, which is double the sum of what each of you invested.

To give you a real-life example, imagine that your group has decided to build a new mosque/temple and that a donor has accepted to co-fund it. Then, your group has to decide who is contributing to the mosque/temple, and also where to place it. When you place the mosque/temple the group members who are close to it will be happier than the ones who are far from it.

In practice, during this exercise, any of you can decide to contribute any number of your own colored tokens to the project by putting them in the central area. By doing this you will be allowed to take the same number of white tokens and put them in the central area as well. This is our way to show how the investment in the common project doubles.

In the same way, you can also remove tokens of your color from the central area. When you do this, you must also remove the same number of white tokens.

There must always be the same number of colored (no matter what color) tokens and white tokens in the central area.

You will also decide how to distribute all the tokens in the central area (both the white ones and the colored ones). In order to distribute tokens, you must put the tokens in front of the person you want to give the common tokens to, but still keeping them in the central area.

Contributions to the common project are fully voluntary. However, you will have to agree with your group mates on how to divide the tokens in the central area between yourselves.
You cannot place the colored tokens of another person in the central area, if she does not want to. And you cannot remove from the central area the colored tokens of someone else, if she does not want to.

Similarly, none can take your colored tokens and put them in the central area if you do not want to. And none can take your colored tokens from the central area and place them outside the central area if you do not want to.

You have maximum 20 minutes to reach a final agreement. In order to reach a valid agreement all group members should agree with it. If at the end of the 20 minutes you have not reached an agreement, you will lose all the white tokens and keep just the colored tokens you were given initially. After 20 minutes you will not be allowed to touch the tokens or negotiate anymore.

In case you reach an agreement before 20 minutes, raise your hand and signal that your group has reached a final decision on the distribution of the tokens. One enumerator will come to attend your group.

When you complete the task, or when the time is over, stop the timer by pressing on the “START/STOP” button.

The enumerators will accept a distribution only if everyone agrees with it. Moreover, they will check that the number of white tokens is the same as the total number of colored tokens.

The enumerator will record the sum of the tokens, both inside and outside the central areas. This represents your result for the round.

The enumerator will reorganize all the tokens as at the beginning. In the REAL round you will receive the same number of tokens of same color. You cannot keep any token from the TRIAL to the REAL round.

In order to clarify the rules, we will now give you some examples:

- **Control question 1:**
  If everyone in the group contributes all his/her tokens, at the end you will have 60 tokens to split across your group. Please raise your hand if this is right.
  [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

- **Control question 2:**
  If everyone in the group contributes no tokens, at the end you will have no tokens to split across your group. Please raise your hand if this is right.
  [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

- **Control question 3:**
  If everyone in the group contributes just 5 tokens, at the end you will have 30 tokens to split across your group. Please raise your hand if this is right. [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

You will complete this task two times. The first time is a TRIAL, for you to learn the rules. The second time is the REAL round, and the number of tokens will be used to calculate your final reward. We start now with the TRIAL round, you will complete the REAL round after this.

Remember to press the button “START/STOP” when you complete the task or the time is over.
D.3 Redistribution task

In this exercise you will start with a number of tokens of your property. You will extract a color, and your tokens will be of that color. The extracted color determines your number of initial tokens and you cannot change it. You will be assigned the same number of tokens in the TRIAL and in the REAL round. Each token has the exact same value, regardless of the color. We will also distribute 30 white tokens in the central area.

We will also distribute a timer per group.

Please do not touch the tokens nor the timer until we give you the start.

[Enumerators distribute individual and group tokens. Enumerators distribute the timers and explain how to operate it.]

Your task is to agree with your group mates on how to distribute the white tokens among yourselves.

You can take the white tokens from the center and distribute them in the marked central area, in front of the member of your group you want to assign them to. Anyone in your group can move the white tokens. You can always touch and distribute all the white tokens, and you must leave them in the marked central area. You cannot put your own colored tokens in the central area or give them to other players in the group.

To give you a real-life example, imagine that someone has decided to donate to your group to build a new mosque/temple. Then, your group has to decide where to place it. When you place the mosque/temple the group members who are close to it will be happier than the ones who are far from it.

You have 20 minutes to reach a final agreement on how to split the white tokens. After that, you will not be allowed to touch the tokens or negotiate anymore. If at the end of the 20 minutes you have not reached an agreement, the whole group will lose all the white tokens and everyone will just keep the initial colored tokens.

In case you reach an agreement before 20 minutes, raise you hand and signal that your group has reached a final decision on the distribution of the tokens. One enumerator will then come to attend your group.

When you complete the task, or when the time is over, stop the timer by pressing on the “START/STOP” button.

The enumerators will accept a distribution only if everyone agrees with it. Moreover, they will check that colored tokens have not been distributed among players.

The enumerator will record the sum of the tokens, both inside and outside the central areas. This represents your result for the round.

The enumerator will reorganize all the tokens as at the beginning. In the REAL round you will receive the same number of tokens of same color. You cannot keep any token from the TRIAL to the REAL round.

In order to clarify the rules, we will now give you some examples:
• Control question 1:
  Your group can decide to split the tokens equally among you. Since the total number of tokens to share is 30, this means that everyone of you can have 10 tokens more than what you started with. If everyone in your group agrees with this distribution, this can be done. Please raise your hand if this is right.

  [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

• Control question 2:
  Your group can decide to split the tokens such that at the end of the task everyone has the same number of tokens, either colored or white. This means that some people will have more white tokens, and some people less white tokens. If everyone in your group agrees with the distribution, this can be done. Please raise your hand if you think this is right.

  [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

You will complete this task two times. The first time is a TRIAL, for you to learn the rules. The second time is the REAL round, and the number of tokens might be used to calculate your final reward. We start now with the TRIAL round, you will complete the REAL round after this.

Remember to press the button “START/STOP” when you complete the task or the time is over.

D.4 Participation task

As the instructions are identical for Task 1 and Task 2, for simplicity in the next paragraphs we describe it referring to Task 1 only.

D.4.1 Scripts for the field supervisor

• With all participants:

  We are now starting the third part of Task 1. For this part we have formed new groups, different from the groups you just played with. Each group face the same situation as in the Task 1.

  We selected randomly one person per group to play this part of the task. This person to decide how he/she wants that her group will take decisions. We will explain the details to each participant later.

  During Task 3 of the experimental session, some of the groups might play again Task 1. This will depend on the choices made by the group representative in this part of the task.

  According to the choice expressed by the group representative, some groups will play again, and some others will not. In all cases, all of you will receive some payment for Task 3.

  It is important for all of you to know that the persons selected for this first part of the task should feel free to choose whatever they prefer. At the end you should not ask them which choices they took. Also, you should know that it will not be possible for anyone to understand from the final results of the task which choices they took.

  We will now tell you who should stay for this part of the task.
With only participants selected for the task:

Consider that each group face the same situation as in Task 1. Remind the rules for Task 1.

This time, you have been extracted in order to decide how this group decision will be taken.

The first option is to play again the bargaining stage as in the previous round. This means that you will seat again with your group members and will bargain until you reach a common agreement. You will be paid for Task 3 according to the decision taken with your new group.

The other option is to not participate in the decision. In this latter case, we will impose a decision. We will assign to your group the agreement taken by another group in the previous REAL round of Task 1 that we just played. We will do this assignment using a lottery. Each person in your group will receive the final number of tokens obtained by the person in the assigned group with the same color. In this way we will define your payment for TASK 3. For example the person with the yellow tokens in your new group will receive the same number of tokens obtained by the person with the yellow tokens in the assigned group. This means that, in case you will not play again with your group, you can expect to receive the same number of tokens as a standard player with your same colour in Task 1. This outcome will be definitive and it will not be possible to change it.

According to your choices, your group might play again Task 1. In case of playing again, you and your group will play during the third round.

Each of you will complete this part of the task with one enumerator.

For this part of the task there will NOT be a trial round. The decisions you will take are final.

Remember that we will keep secret all your answers. The other group members will never know your choices at this stage.

Remember that we already formed new groups, but you do not know the identity of your new group peers.

The rule under which you will play the last round will depend on your choices. Therefore, it is always better for you to carefully pick the option you truly prefer.

In order to clarify the rules, we will now give you some examples:

- Control question 1:
  Please raise your hand if you think that the following sentence is correct: “You will be asked to choose between, on one side, performing the Task 1 again and, on the other side, be assigned the outcome of another group.”
  [Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

- Control question 2:
  Please raise your hand if you think that the following sentence is correct: “In both cases, if
you play again Task 1, and if you do not, you will always receive some payment for TASK 3. The two payments might be different.

[Verify EVERYONE has their hand raised. If someone did not understand, clarify.]

D.4.2 Scripts for the enumerators

I will now present you different choices in which you have to choose between two alternatives.

The first alternative will always be repeat Task 1 as you have just done with new group peers. If you take part again in Task 1, you will be in group with different team mates than before.

The second alternative will be to NOT repeat Task 1 with new group peers.

What will happen in Task 3 will depend on your answers. Before Task 3 we will extract one choice, and the choice you made in that case will be final.

Each choice can be extracted. Therefore, it is always better for you to tell me your true answer. The lottery guarantees that no one will be able to understand your choices. And I will keep secret all your answers. Therefore you can feel free to express your true opinions.

When you choose whether you prefer to complete Task 1 again with new group peers or not you might think at different factors. For example:

- Do you remember how much did you get in the real round you just completed? How much? [Remind the correct answer.]
- In the previous two rounds, did you enjoy completing Task 1(2) with your group?
- Consider to play again Task 1(2) with your newly assigned initial tokens. How much do you think you will be influential in the group in order to determine the final outcome?

Elicitation procedure of WTP and beliefs:

- Choice 1:
  The first alternative is to complete Task 1 again with new group peers.
  The second alternative is to not complete Task 1 with new group peers.
  Remember that in case we will extract this choice, your new group will complete Task 1 again or not according to your answer. Your decision will be final.

- Choice 2-6:
  The first alternative is to complete Task 1 again with new group peers AND lose 1-5 token.
  The second alternative is to not complete Task 1 with new group peers.
  In case you choose to first alternative, you will complete Task 1 with your initial tokens. We will deduct 1-5 token (5-25 BDT) from your final total compensation.
  Remember that in case we will extract this choice, your new group will complete Task 1 again or not according to your answer. Your decision will be final.

- Choice 7-11:
  The first alternative is to complete Task 1 again with new group peers AND win 1-5 tokens.
  The second alternative is to not complete Task 1 with new group peers.
In case you choose to first alternative, you will complete Task 1 with your initial tokens. We will add 1-5 token (5-25 BDT) to your final total compensation.

Remember that in case we will extract this choice, your new group will complete Task 1 again or not according to your answer. Your decision will be final.

- Guess under the participatory option:
  Consider your initial tokens. Imagine to complete again Task 1(2) with new group members. How many tokens IN TOTAL do you think you will get?

- Guess under the group-extraction option:
  Imagine you do not complete again Task 1(2), and instead receive the outcome of a player with your initial tokens from another group. How many tokens IN TOTAL do you think you will get? You will win 30 takas if you answer correctly to this question!!

D.5 Individual survey after the experimental session

Script for intro:
“Thank you for your participation in the study!
In conclusion, we would like you to ask you few questions on your perceptions of the tasks. All your responses will be kept confidential: we will not share your answers with anyone outside the research team.
You will receive your compensation from the tasks after this short survey. The answers in this short survey will not change your compensation.”

- How much are you satisfied with your outcome in the 1st round?
  Options: Very satisfied; Satisfied; Neither satisfied or dissatisfied; Dissatisfied; Very dissatisfied; Don’t know; Refused to answer.

- How much are you satisfied with your outcome in the 2nd round?
  Options: Very satisfied; Satisfied; Neither satisfied or dissatisfied; Dissatisfied; Very dissatisfied; Don’t know; Refused to answer.

- How much are you satisfied with your outcome in the 3rd round?
  Options: Very satisfied; Satisfied; Neither satisfied or dissatisfied; Dissatisfied; Very dissatisfied; Don’t know; Refused to answer.

- After which round were you most satisfied with your outcome?
  Options: Task 1; Task 2; Task 3.

- What is the maximum amount all your group could have won in the contribution task?
  Answer: report integer.

- How could you reach this maximum amount? (do not probe)
  Options: We could have won the maximum if everyone had contributed everything; Other; Don’t know; Refused to answer.