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## Water Resources in a changing climate: Is MGNERGA able to address water insecurity in rural India?

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## Infrastructure for Climate Resilient Growth in India (ICRG) Programme

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## **Water resources in a changing climate: is MGNREGA able to address water insecurity in rural India?**

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### **Abstract**

India is one of the worst water-stressed countries in the world. Climate change is expected to pose serious challenges to water resources in terms of availability and quality. Therefore, this paper aims to ‘investigate the opportunities and challenges of improving water security through MGNREGA’ via mixed method case-study research in eleven ICRG villages in Odisha and Chhattisgarh in India. The goal of the paper is twofold. First, it establishes the demand for improved water availability. Second, given the high demand for water related infrastructure compared to other permitted works under MGNREGA, we reflect on whether the decision-making process in planning and implementing MGNREGA meets the needs and priorities of beneficiaries. Specifically, we investigate whether self-selected local politicians, who are responsible for implementing water conservation projects, have any social preferences to keep their (non-binding) promises to pro-climatic preferences. Results suggest that there is a positive role of non-binding promises made in public on politician behaviour. Also, due to the awareness through ICRG programme, villagers and politicians have higher preferences for water conservation projects.

**Keywords:** climate change; water security; social protection; MGNREGA; India

### **1. Introduction**

The National Rural Employment Guarantee Act (MGNREGA) aims to enhance livelihood security of households in rural areas in India by providing at least one hundred days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. While the primary objective of MGNREGA is to augment wage employment, its supplementary objective is also to strengthen natural resource management through asset creation in areas such as water harvesting, soil conservation, irrigation, flood protection, afforestation and plantation. By doing so, the ultimate aim of MGNREGA is to address the causes of chronic poverty such as severe and persistent droughts as well as to insulate local communities from the adverse effects of climate change.

The evidence on the potential effect of public works programme such as MGNREGA on climate change is promising. The experience of other countries suggest that improved water conservation has led to increased agricultural productivity and an increase in groundwater recharge such that dry springs have started to flow again. Further, through public works programmes, communities have enhanced income generation and improved access to markets, education, and health facilities (Grosh et al., 2008). The evidence for South Asian and African countries (in Africa, public works programmes in Ethiopia, Rwanda and Tunisia) suggests that public works programmes can have observed positive environmental benefits. The most likely type of project that can enhance environmental benefits are water and conservation projects (World Bank, 2013). These projects can substantially increase the areas under irrigation for a second crop, thus enhancing the scope for greater second-round employment effects (Subbarao, 2003).

In the case of MGNREGA, a large portion of projects are in water conservation. This implies that MGNREGA can have a substantial role to play in adaptation to climate change through appropriate construction, as in the case of the ‘Infrastructure for Climate Resilient Growth’ programme (ICRG). There is now a realisation that natural resource asset creation can have significant positive effects, such as prevention of soil erosion, and are important mechanisms to help poor households respond to and build resilience to climate change (Kuriakose et al., 2012). An example of a successful public works programme in this regard is Ethiopia’s Productive Safety Nets Programme, which is sometimes dubbed Africa’s largest climate change adaptation programme. As Subbarao et al. (2013, p.23) notes, ‘public works programmes have their greatest potential to contribute to climate change adaptation by helping communities diversify risk, enhance incomes and build skills and assets. The key to enhancing the potential of MGNREGA to contribute to climate change adaptation is to build climate resilient infrastructure, targeting climate change hotspots in particular.

Therefore, this paper aims to investigate the opportunities and challenges of improving water security through MGNREGA. First, we establish demand for improved water availability. In 2015, more than 132 million people in rural India did not have access to basic water services (World Bank, 2018b). The problem is likely to be further aggravated during the summer season when many natural water sources dry out. Water scarcity is a life-threatening issue to millions of people in India and other developing countries. Second, given the high demand for water related infrastructure compared to other permitted works under MGNREGA, it is important to reflect on whether the decision making process in planning and implementing MGNREGA meets the needs and priorities of beneficiaries.

Specifically, we set out to understand whether self-selected local politicians have any social-preferences to make and keep promises to implement water conservation projects. A key feature of MGNREGA is that it follows a decentralised democratic set up in which local politicians and citizens play a crucial

role in implementing the works successfully. Political actors are elected to form village council (Gram Panchayat or GP) through conventional democratic elections. In addition, it follows a participatory governance structure in which citizens and elected politicians with other responsible GP officials meet annually to discuss the possible works that will be undertaken in the following financial year based on the demands of the citizens. In such meetings, politicians commit to implement the works citizens demand provided they do not face any unexpected institutional hurdles (e.g., resource availability from the central government).

A surprising feature of MGNREGA implementation is the large variation in MGNREGA implementation across the states<sup>1</sup> and also across local governments in the same state (Chopra, 2014; Dey and Sen, 2016; Himanshu et al., 2014, Gupta and Mukhopadhyay, 2014; Roy 2014). This suggests that while state capacity and the political commitment of state leaders are important in explaining across-state variation in MGNREGA implementation (Chopra, 2015), other factors may drive implementation of the MGNREGA at the *within state* level (see also Jenkins and Manor, 2016). The most important of these factors is the commitment of the sarpanch/gram sansad leader (elected officials who head local governments – gram panchayats or sansads) to MGNREGA implementation. The administration of the MGNREGA at the local level is the responsibility of the elected sarpanch/gram sansad leader, who prepares the list of projects that may be suitable for the MGNREGA, enrolls villagers for job cards, cascades demand for MGNREGA work to the upper levels of government and ensures that villagers who would like MGNREGA work are allocated to appropriate projects once these are allocated to the villages in their jurisdiction. The administration of the MGNREGA is complex and needs significant effort from village leaders to make sure that the scheme functions well at the village level. Drawing from recent evidence from behavioural economics, we investigate whether village leaders have any social preferences for their commitments and how such preferences would help strengthen natural resource management, in particular water conservation projects.

## **2. Research design and methods**

This study is part of the United Kingdom Government Department for International Development funded ICRG programme, which provides technical assistance to India's Ministry of Rural Development (MORD) and three states of India, Bihar, Chhattisgarh and Odisha, to improve the design and implementation of natural resource management activities under India's central anti-poverty

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<sup>1</sup> Existing data from India's Ministry of Rural Development dataset for the three ICRG states (Bihar, Odisha, and Chhattisgarh) clearly shows a significant overall increase on amount of money spent natural resource management NRM works and the number of works completed (e.g., watershed management work) in Odisha, and Chhattisgarh, but a decrease in Bihar.

scheme, the MGNREGA. This paper draws on three strands of research to investigate the opportunities and challenges of improving water security through MGNREGA’:

### 2.1.1 Demand for water availability

The part of the study was conducted in nine villages across four districts: Bilaspur and Rajnangaon in Chhattisgarh and Kalahandi and Kendujhar in Odisha, during the months of January and February 2018. Respondents were recruited by community facilitators employed by local NGOs. The community facilitators provided a familiar face to the respondents which is important because of the limited interaction of rural households with individuals from outside communities. The community facilitators also served as the main point of contact for obtaining authorisation from village leaders and they identified and organised suitable survey locations.

Respondents were interviewed individually and it was ensured that the survey was conducted in an isolated environment without anyone listening or interfering. The survey was designed using Sawtooth Software Lighthouse Studio (version 9.5.3) and administered on tablets using an offline survey app. The interviews were conducted in conversational form because many of the questions required probing. A total of 481 respondents participated in the survey of which 401 are included in the analysis.

Respondents were asked to rank seven broad categories of permissible works under MGNREGA according to how beneficial their implementation would be to their household. Each respondent was asked to state at least their first and second priority.

### 2.1.2 Decision-making on planning and implementation of MGNREGA

The ICRG villages selected for this strand of the research were in Nuapada district, under Odisha state, Madhubani district, under Bihar state, and Surajpur district (Premnagar was formerly located in Surguja district)<sup>2</sup>, under Chhattisgarh state. These ICRG villages were selected as a suitable case study because of their location in climate vulnerable districts, ‘backward’ blocks, and the phase of ICRG implementation. The case study villages were selected through a range of criterion. The Central Research Institute for Dryland Agriculture’s (CRIDA) climate vulnerability rank and India’s Ministry of Agriculture’s drought frequency measures outlined in the ‘Scoping Study on Infrastructure for

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<sup>2</sup>Surguja district was split into two districts in 2012-2013, Surajpur and Surguja. This resulted in Annapurna village being recategorised as part of Surajpur district. However, the secondary data used in this paper is based on the former district categorisation as data sources prior to 2012-2013 have not been updated. Block level data has been used where possible.

Climate Resilient Growth through MGNREGA' (2016) were used as the two sorting criteria to identify the most vulnerable districts to climate change in Odisha, Bihar and Chhattisgarh.<sup>3</sup> However, less weight was given to the drought frequency measure given that this refers only to frequency, rather than severity. Then the ICRG block within these districts with the lowest backwardness rank were selected. However, the criterion had to be relaxed in some cases, as some of the blocks initially selected did not have ICRG work planned or underway at the time of the selection of the case study sites. The village selected from each of the three short-listed blocks were chosen to ensure that there was variation in the phase of ICRG execution across the cast study villages, in order to allow for the examination of heterogeneity of planning and implementation.

The data was collected from October to December, 2017 and in January and June 2018, and involved a total of 255 residents of three villages, representing 30.94% of total households in Khairani (case study village 1), 9.66% in Mansapur (case study village 2) and 26.17% in Annapurna (case study village 3). These case studies primarily followed a qualitative and interpretative approach with an emphasis on context, quality, depth, richness and understanding (Valentine, 2001; Gelo et al., 2008). The qualitative data from the main data-gathering phase of this study is based mostly on in-depth one-to-one semi-structured interviews with 60 female village inhabitants, and 15 focus group discussions with 78 village inhabitants (68 females and 10 males), each lasting approximately 1.5 to 2 hours. Participant observation and transect walks were carried out in each village. The qualitative data was supplemented with 60 household surveys with the head of household or his/her spouse, each lasting approximately 45 minutes to 1 hour, and 3 village surveys with 48 key informants, each lasting approximately 3 to 4 hours. Participants were selected through purposeful sampling (see Patton, 2002) as it enables close focus on cases and issues of interest.

Interview and focus group discussions focused on issues relating to (1) Priorities and needs, (2) Perception and understanding of climate shocks (3) Ranking of climate-related shocks, (4) Impacts of climate shocks and associated responses (5) MGNREGA and ICRG planning, decision-making, and implementation, specifically from a gender perspective (6) Local decision-making. Discussions were coded through intensive content analysis to draw out key themes, sub-themes and patterns.

### 2.1.3. Politicians and their promises in the decentralised MGNREGA

In Odisha, Keonjhor district and in Bihar, Banka district were selected due to convenience and the researchers' prior experience of working there. From Keonjhar district the following ICRG blocks were selected randomly for our study: Patna, Saharpada, Ghatagaon, and Telkoi. Also, Anadpur block from

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<sup>3</sup> District level data was used as block level data was unavailable at the time of village selection.

Keonjhor district was randomly selected as a non-ICRG block. From Banka district, we randomly selected Belhar block as a non-ICRG block and the following blocks as ICRG blocks: Fullidumar, Chanan, Bousi, and Dhoraiya. From each selected block, we then chose villages following random sampling. We then randomly selected our participants, common villagers and politicians, from a carefully assembled list of politicians who had stood for GP elections during the last ten years and a village census. Our research assistants recruited local enumerators to collect participant information. They prepared a list (census) of households, which was always kept with them only, containing basic demographic information (name of household head, sex, education, occupation). Following a blinded, random protocol, the enumerators selected potential participants and invited them to participate with an invitation letter prepared by the research team.

Our sample contains 230 respondents from ICRG villages and 214 respondents from non-ICRG villages (and in total, we have 444 observations). Also, 25% and 28% of the respondents are politicians in ICRG and non-ICRG villages. In Table 1, we present the summary statistics of the observable characteristics of the respondents, by gender, educational level, age, caste, elected member and occupation. We note that that 24% and 18% of the respondents in ICRG and non-ICRG villages are female. There is little difference in the age profile and years of education of respondents in ICRG and non-ICRG villages (average years of education are 10.1 and 10.23 years in ICRG and non-ICRG villages and average age is 40.38 in ICRG villages and 38.58 in non-ICRG villages). Similar pattern is observed in caste profile except OBC (Other Backward Caste) category—40% in ICRG and 28% in non-ICRG. However, 83 per cent of respondents are agricultural labourers in ICRG villages as compared to 64 per cent of respondents in non-ICRG villages.

It is argued in political science and political economy literature that democratic political institutions provide a useful mechanism to discipline politicians in sustaining citizens' welfare (Besley and Coate, 1997; Downs, 1957; Osborne and Slivinski, 1996; Powell, 2000). While elected representatives fundamentally affect the welfare of citizens in a democracy, holding politicians to account is not always straightforward. For an elected representative with a self-serving agenda, a tempting strategy would be to deliberately break their election pledges once elected. Decentralised democratic system in India (and also in other developing countries) offers advantages in minimising politicians' deliberate misconducts, compared to a more distant and centralised system of programme delivery, as it is subject to electoral pressure and careful scrutiny by local citizens. Within the same decentralised political system, however, there is typically significant variation in the manner local politicians deliver public goods to their constituencies due to, for example, clientelism, corruption, and so on. The main focus in reducing such failures has been costly monitoring and use of financial incentives by the central governments (e.g., Fisman and Miguel, 2007; Hanna, and Ryan, 2012; Niehaus and Sukhtankar, 2013; Olken, 2007). Such

costly incentive-based disciplining mechanisms in developing countries are, however, constrained by the higher opportunity costs of public funds.

Despite negative perceptions about politicians behaviour, evidence exists that argues that not all politicians are dishonest, aiming at rent extractions through corrupt means; rather they go beyond their self-interest motive by taking privately costly actions to reduce inequality (Enemark et al. 2016; Jack and Recalde, 2015; Rustagi and Kosfeld, 2015). Empirical literature investigating politicians' self-selection mainly focus on their ability (Dal Bó et al., 2017; Ferraz and Finan, 2011), not on their social preferences. A recent and growing literature suggest that individuals have different motivations and typically they self-select in job occupations, organizations, that better match with their needs, social-preferences, and aspirations (e.g., Banuri and Keefer, 2016; Besley and Ghatak, 2005; Delfgaauw and Dur, 2007; Hanna and Wang 2017, 2010; Heyes, 2005). Herein we investigate the effect of low-cost commitment instrument, that is, a (non-binding) promise (Vanberg 2008), on politicians' preferences to adopt more pro-climate programmes.

According to traditional choice theory, such promise-breaking behaviour is not surprising - in the absence of a mechanism or contract - an individual should break a promise whenever this is consistent with her material self-interest (e.g., contract theory (e.g., Akerlof, 1970), mechanism design theory (e.g., Holmstrom, 1979). In contrast, recent experimental studies suggest that an individual who breaks a promise may incur an intrinsic psychological cost (Charness and Rabin, 2002; Gneezy 2005; Hao and Houser 2010). Two predominant views suggest that promises induce emotional commitments to fulfil contractual obligations based on a norm of promise keeping (Ellingsen and Johannesson 2004) or will be kept because of guilt accruing from letting down the payoff expectations attributed to others (e.g., guilt aversion) (e.g., Charness and Dufwenberg, 2006). Vanberg (2008) investigated whether promise-keeping reflects commitment preferences or guilt aversion and found support for the former.

We test the external validity of this norm-based instrument: whether there is a norm of promise-keeping among these local politicians. We first use standard survey to understand respondents' (common villagers and politicians) perceptions about promise keeping. We conducted the survey in two ICRG blocks and two non-ICRG blocks in Bihar and Odisha. Politicians in both ICRG and non-ICRG villages think that it is important that Panchayat members keep their promises. However, in contrast to the general perceptions of the people (both politicians and non-politicians) in ICRG villages, people in non-ICRG villages believe that it is more important for an elected member in the Panchayat to deliver than being honest. A similar finding is worth stating here—people in ICRG villages believe that the elected members should be generous whereas non-ICRG people are less concerned about such characteristic as long as elected members are able to deliver.

Next, we adopt a novel approach of incentivised elicitation survey, extending Krupka and Weber 2013 (as primary data from surveys are not sufficient, due to, e.g., hypothetical bias), that can extract social norms of promise-keeping through a simple coordination game. We conducted an anonymous survey. Politicians and common villagers were presented with hypothetical contextual situations about a hypothetical politician's actions after committing to one of the two possible works (1) road construction and (2) water conservation) in the annual gram-sabha meeting: (i) promising (1) and keeping the promise; (ii) promising (2) and keeping the promise; (iii) promising (1) and implementing (2); and (iv) promising (2) and implementing (1). The participants were asked to rate the level of social acceptability of the hypothetical politician's each action from 'very socially inappropriate' to 'very socially appropriate' on a quantified scale of one to four. Respondents received monetary incentives to match the modal response provided by others rating the same choice environment. This survey will give respondents a familiar context and will help us understand their preferences for natural resource management.

### 3. Results and Conclusions

**Demand for water related infrastructure:** Water scarcity is a life threatening issue to millions of people in India and other developing countries yet there were more works related to rural connectivity completed under MGNREGA in 2016/2017 than works related to water conservation (Government of India, 2018). This study demonstrates a high demand for water related infrastructure compared to other works permitted under MGNREGA. Respondents were asked to rank seven broad categories of permissible works under MGNREGA according to how beneficial their implementation would be to their household. More than 80% of the respondents selected work related to water (43%: drinking water, water conservation: 20%, or 19%: irrigation work) as their first priority while only 8% selected rural connectivity which is one of the most implemented works in MGNREGA.

To test for differences in error variance between gender,<sup>4</sup> and across different levels of education,<sup>4</sup> a heteroscedastic conditional logit model is estimated. All attributes continue to be significant and with the expected signs. The alternative specific constant for the status quo remains negative and significant and there are no gender differences in terms of marginal utility for any of the non-payment attributes – including yield.

The estimated scale parameter for female respondents is negative but insignificantly different from zero (z-stat: -1.13). The scale for male respondents with zero years of schooling is normalised to one and the

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<sup>4</sup>During the pilot study, it became clear that respondents are either reluctant to report their level of income or likely to underreport it. Education is therefore included in the model as a proxy for individual-level income.

scale for female respondents with zero years of schooling can be computed as  $\lambda_{\text{female}} = \exp(-1.32) = 0.88$ . We fail to reject a hypothesis test of  $\lambda_{\text{female}}$  being equal to one (p-value: 0.227) which means that there is no significant difference in error variance across gender. The scale for educated respondents (independent of gender) increases by  $\lambda_{\text{educ}} - 1 = \exp(0.043) - 1 = 0.04$  per extra year of schooling. A hypothesis test of  $\lambda_{\text{educ}}$  being equal to one is rejected (p-value: 0.002). This implies that more educated respondents make more deterministic choices compared to less educated respondents (the error variance is lower). Finally, it is estimated to test for scale heterogeneity between payment vehicles. It is hypothesised that respondents are more familiar with labour contributions and that the error variance for the labour sample therefore is lower than in the money sample. This hypothesis is rejected.

**Decision-making on planning and implementation of MGNREGA:** Given the high demand for water related infrastructure compared to other permitted works under MGNREGA (such as rural connectivity), it is important to reflect on whether the decision making process in planning and implementing MGNREGA meets the needs and priorities of beneficiaries. Women's bargaining power and control in decision-making on planning and implementation of MGNREGA can be reduced by gender specific ideologies surrounding socio-cultural norms. Women's unpaid care work responsibilities, purdah norms, location of the meeting venue (gram panchayat bhawan), and unavailability of other family members to look after the house, were cited as reasons for women not attending village meetings. Women often feel uncomfortable to speak in public in the presence of male relatives, this is particularly the case for women of general caste and other backward castes, in comparison to scheduled caste families. Nevertheless, it was found in case study village 1 that the participation of women in the Panchayat meetings has increased as the MGNREGA programme requires participation of women Self Help Group (SHG) members in the Panchayat decision-making process. While women SHGs were specifically invited to meetings related to MGNREGA, not all women are members of SHGs, specifically, recently married women, young mothers and those who migrate for most of the year. In contrast, women's participation in the community decision-making process specifically related to government schemes and programme implementation was found to be meagre in case study village 3. In case study village 2, irrespective of gender, participation in the Panchayat decision-making process is quite low in the village. Most of the villagers were unaware of the village meeting, locally called Gram Sabhas. Critically, the majority of interviewees were unaware of any meetings held to decide the type of ICRG work or specific location of the site in the village.

**Politicians' commitment and impact of ICRG:** In the standard survey, we ask respondents in ICRG and non-ICRG villages to rate some statements from 'strongly disagree' to 'strongly agree' on a qualified scale of four. The first statement states (see Table 2):

*It is important to keep the promises that Panchayat Members/Sarpanches make to villagers*

This is to understand how respondents perceive the importance of promise-keeping by their elected representatives in the Gram Panchayat. In both villages, villagers, politicians, and other officials should be aware of the promise making by the politicians during electoral campaigns and also in the Gram Sabha. In ICRG villages, a more rigorous awareness programme related to climate change for general people has been conducted. Moreover, an awareness campaign has taken place in ICRG villages to encourage people to attend the Gram Sabha meeting which should amplify the importance of commitments made by the GP officials and elected members. We hypothesise that respondents in ICRG villages consider promise-keeping more important than non-ICRG respondents. Hence we hypothesise:

*H<sub>01</sub>: Villagers and politicians in ICRG villages give promise-keeping more importance than the villagers and politicians in non-ICRG villages.*

We are unable to accept the hypothesis. Both villagers and politicians in ICRG and non-ICRG villages believe that it is important for politicians to keep their promises. The mean perception of ICRG villagers about the importance of promise keeping is 3.78 and the same is 3.69 for non-ICRG villagers and these means are not statistically different (t-statistic is 0.40, see Table 2). Similar result is observed for politicians—the means are 3.90 and 3.81 for ICRG and non-ICRG villages and they are not statistically different (t-stat is 1.26). Figure 1 supports this. In Figure 2 we show that perception in ICRG villages is not different from non-ICRG villages when we use the pooled data. We then have the following two statements:

*A Panchayat-member's honesty<sup>5</sup> is very important to villagers*

*It does not matter whether a Panchayat-member is honest or not as long as he/she delivers*

These two consecutive statements aim to disentangle whether general villagers and politicians consider 'honesty' as an important characteristic of the self-selected politicians or their ability in delivering intended policies is more important than 'honesty' as a characteristic. Recent studies in political economy and political science argue that politicians' character is one of the key elements that affect political success as voters care about such characteristics (e.g., see Bernheim and Kartik, 2013; Thomson et al., 2018). Although general wisdom suggests politicians are, perhaps, more familiar with promises than most others: stereotypes suggest that making promises is a vital ingredient of election campaigns, while promise-breaking belongs to the fine art of political practice (e.g., ISSP Research

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<sup>5</sup> By Honesty we mean whether the member is truthful or not, in particular whether he/she keeps his/her promises

Group 2008; Thompson 2011). Evidence also exists that contradict such notions: people in general, and politicians in particular, have social preferences to keep their promises (e.g., Banerjee et al., 2019).

We test the following hypothesis to test whether ICRG interventions have motivated politicians to be more sincere in keeping their promises to villagers.

*H<sub>02</sub>: Villagers and politicians in ICRG villages value promise-keeping more than than the villagers and politicians in non-ICRG villages.*

We are unable to reject the hypothesis. We find that villagers and politicians in ICRG villages believe that honesty is one important characteristics of a politician. Respondents in non-ICRG villages, both politicians and non-politicians, share the same perception but their mean responses are statistically different from the respective counterpart in ICRG villages. The mean response among ICRG villagers is 3.78 and the same for non-ICRG villagers is 3.08 and these means are statistically different (t-statistic is 6.31) (see Table 2 and Figure 3). Similar result is observed for politicians. The mean response among ICRG politicians is 3.95 and the same for non-ICRG politicians is 3.14 and these means are statistically different (t-statistic is 5.80). Overall, using the pooled data, it is evident that ICRG-respondents more strongly agree with the first statement above than non-ICRG respondents (see Figure 4).

Results show that (i) politicians in ICRG villages are more keen to keep their promises and take up more water conservation projects; (ii) compared to non-ICRG villages, respondents from ICRG villages (both politicians and non-politicians) believe keeping the promise of implementing Project 2 is socially acceptable; and (iii) promising Project 2 and implementing Project 1 was perceived differently among ICRG and non-ICRG respondents—ICRG respondents feel this was more socially unacceptable than non-ICRG respondents. This suggests that there is a positive role of non-binding promises made in public on politician behaviour. Also, due to the awareness through ICRG programme, villagers and politicians have higher preferences for water conservation projects.

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Figure 1

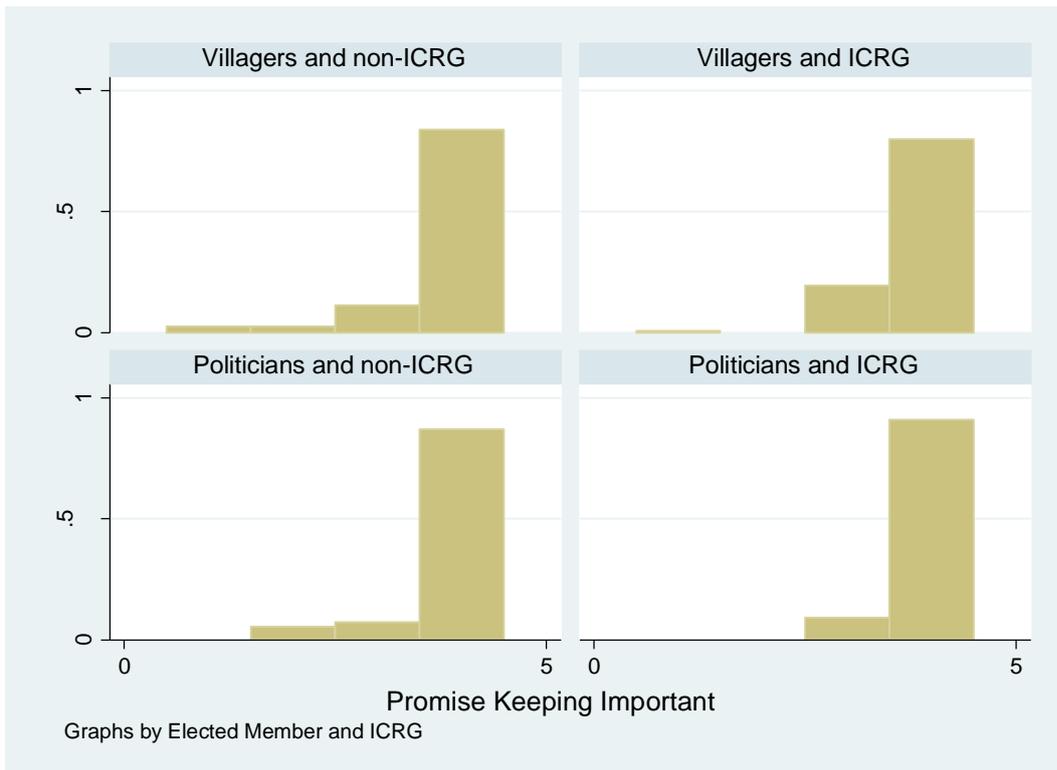


Figure 2

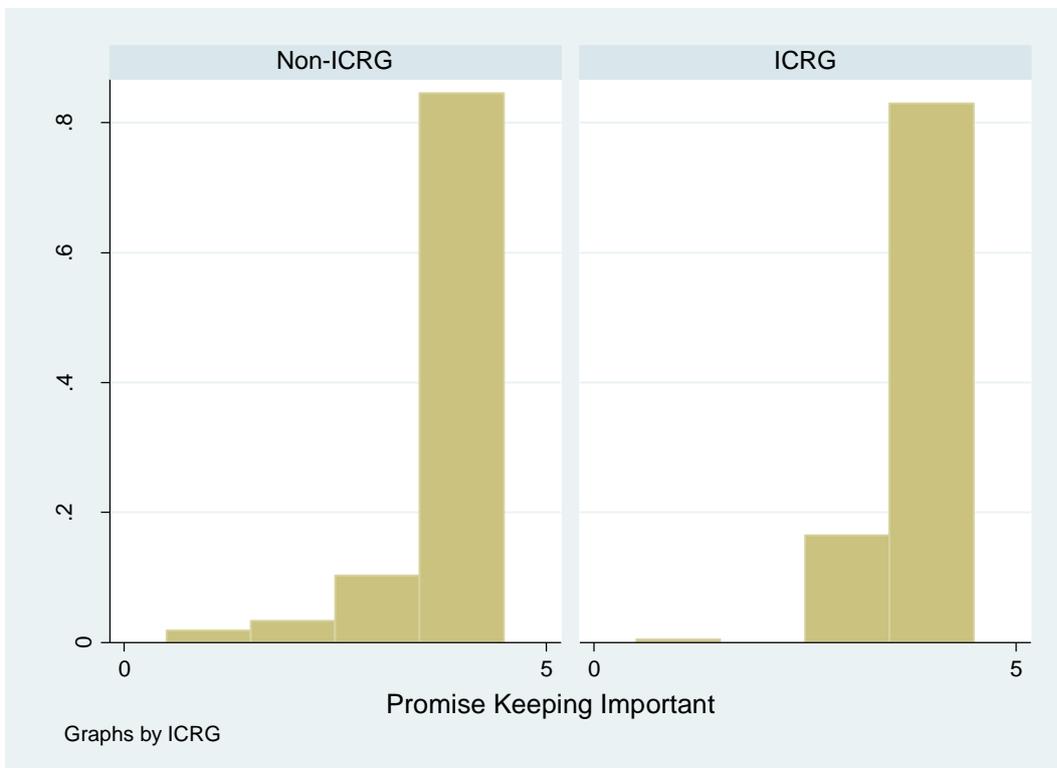


Figure 3

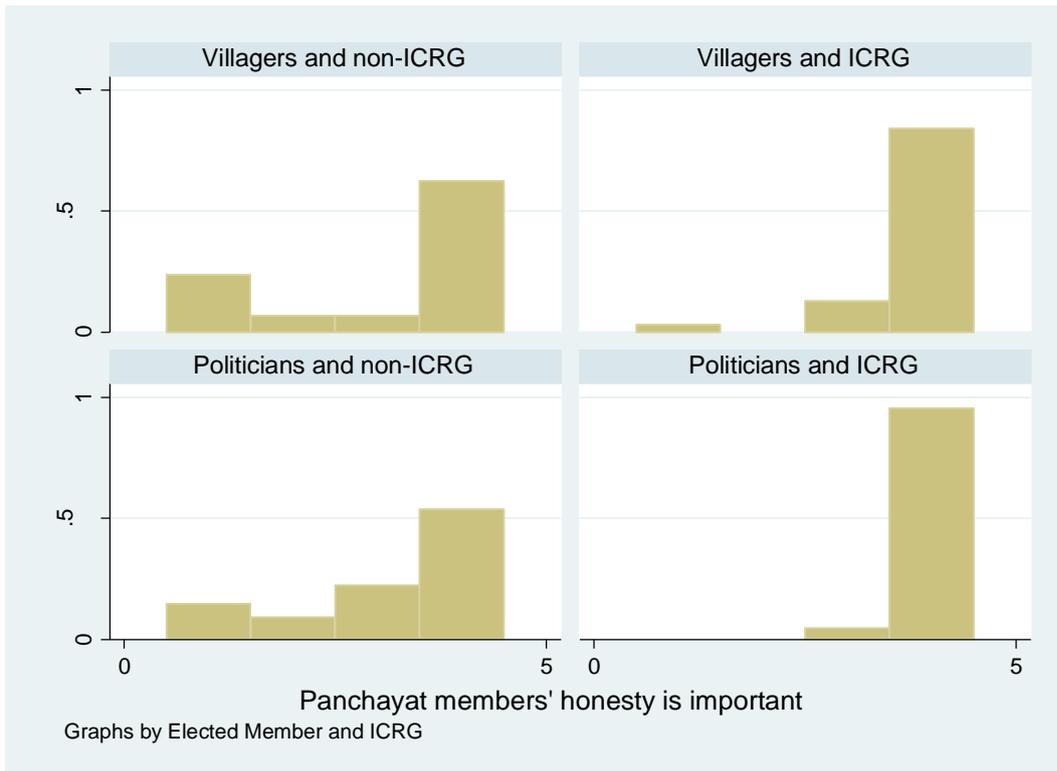


Figure 4

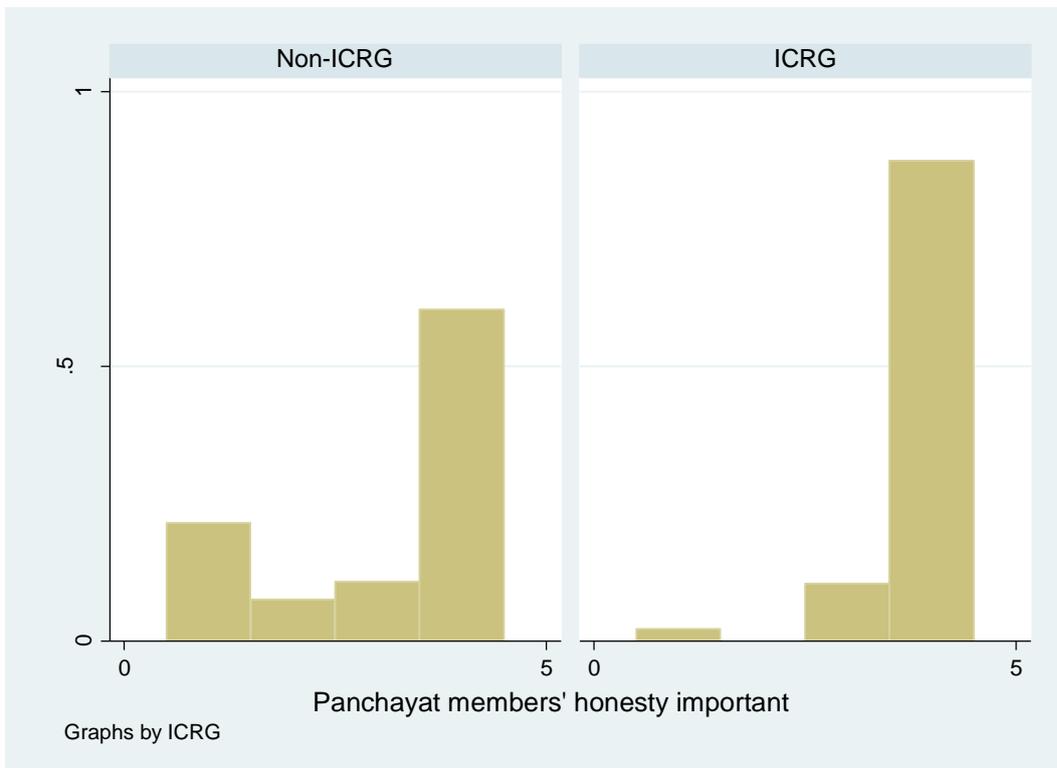


Table 1. Summary of Sample demography

<b>Category</b>	<b>ICRG Mean</b>	<b>Non-ICRG mean</b>	<b>Combined Mean</b>
Female	0.23 (0.42)	0.17 (0.38)	0.20 (0.40)
Froward Caste	0.10 (0.30)	0.14 (0.35)	0.12 (0.32)
SC (Scheduled Caste)	0.14 (0.34)	0.21 (0.40)	0.17 (0.37)
ST (Scheduled Tribe)	0.36 (0.48)	0.37 (0.48)	0.37 (0.48)
OBC (Other Backward Caste)	0.40 (0.49)	0.28 (0.45)	0.34 (0.47)
Education	10.1 (3.83)	10.23 (4.01)	10.16 (3.92)
Farmer (in %)	83%	64%	74%
Age	40.38 (8.67)	38.58 (10.02)	39.51 (9.38)
Elected member	25%	28%	27% 230
Observation	230	214	444

Table 2

Q#	Questions	Common citizens			Politicians		
		ICRG Mean (s.d.)	Non-ICRG Mean (s.d.)	t-test (p-value)	ICRG Mean (s.d.)	Non-ICRG Mean (s.d.)	t-test (p-value)
Q1	<i>It is important to keep the promises that Panchayat Members/Sarpanch make to villagers</i>	3.78 (0.03)	3.76 (0.04)	0.40 (0.68)	3.90 (0.03)	3.81 (0.07)	1.26 (0.21)
Q2	<i>Panchayat members' salaries from doing Panchayat-related works are very low</i>	3.84 (0.03)	3.72 (0.05)	1.86 (0.06)	4.00 (0.00)	3.75 (0.09)	2.91 (0.00)
Q3	<i>A Panchayat-member's honesty<sup>6</sup> is very important to villagers</i>	3.78 (0.04)	3.08 (0.10)	6.31 (0.00)	3.95 (0.02)	3.14 (0.15)	5.80 (0.00)
Q4	<i>It does not matter whether a panchayat-member is honest or not as long as he/she delivers</i>	2.05 (0.10)	3.15 (0.10)	-7.61 (0.00)	2.40 (0.17)	3.61 (0.09)	-5.71 (0.00)
Q5	<i>A Panchayat-member should be a generous person</i>	3.87 (0.02)	3.43 (0.08)	5.23 (0.00)	3.92 (0.03)	2.96 (0.16)	6.42 (0.00)
Q16	<i>It does not matter whether a panchayat-member is generous or not as long as he/she delivers</i>	2.04 (0.10)	2.32 (0.11)	-1.79 (0.07)	2.16 (0.16)	3.25 (0.15)	-4.67 (0.00)
Q7	<i>In the Gram Sabha, promises made by Panchayat Members/Sarpanch regarding possible works for next year are mostly kept</i>	3.33 (0.06)	3.04 (0.05)	3.46 (0.00)	3.56 (0.06)	3.18 (0.12)	2.85 (0.00)

<sup>6</sup> By Honesty we mean whether the member is truthful or not, in particular whether he/she keeps his/her promises

## **Appendix**

## Section A

### General information to be completed by the respondents

By proceeding with the survey you are confirming that you: (1) have read or been informed about the content of the Participation Information Sheet and have had the opportunity to consider the information and ask questions; (2) understand that your participation in the study is voluntary and that you are free to withdraw at any time without giving a reason; (3) agree that the collected information may be used in an anonymous form to support other research in the future.

1. Male (\_\_\_) Female (\_\_\_)
2. Age:
3. Household main occupation:
4. What is your main occupation, if any:
5. What jati (i.e., caste) do you belong to? \_\_\_\_\_
6. Religion: Hindu (\_\_\_) Muslim (\_\_\_) Other (\_\_\_)
7. How many years of education have you completed? \_\_\_\_\_ years
8. Have you heard of Climate Change? Yes No
9. Have you heard of ICRG? Yes No. If Yes,
10. Have you attended any ICRG training session? Yes (How many sessions \_\_\_) No
11. How many Gram Sabhas did you attend in last 3 years? \_\_\_\_\_
12. Are you involved in planning and/or implementing ICRG works? Yes No
13. If Yes, what's your role? \_\_\_\_\_
14. Are you presently an elected representative in your Gram Panchayat? YES NO
  - a. If yes, in what position? \_\_\_\_\_
  - b. If yes, is this a reserved seat? YES NO If, YES, which reservation category \_\_\_\_\_

**Section B**

Please rate to what extent you agree/disagree with the following statements, according to the scale below:

Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree
1	2	3	4

Q1	<i>It is important to keep the promises that Panchayat Members/Sarpanch make to villagers</i>	1	2	3	4
Q2	<i>Panchayat members' salaries from doing Panchayat-related works are very low</i>	1	2	3	4
Q3	<i>A Panchayat-member's honesty<sup>7</sup> is very important to villagers</i>	1	2	3	4
Q4	<i>It does not matter whether a panchayat-member is honest or not as long as he/she delivers</i>	1	2	3	4
Q5	<i>A Panchayat-member should be a generous person</i>	1	2	3	4
Q6	<i>It does not matter whether a panchayat-member is generous or not as long as he/she delivers</i>	1	2	3	4
Q7	<i>In the Gram Sabha, promises made by Panchayat Members/Sarpanch regarding possible works for next year are mostly kept</i>	1	2	3	4

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<sup>7</sup> By Honesty we mean whether the member is truthful or not, in particular whether he/she keeps his/her promises

**Section C**

Suppose, in a Gram- sabha meeting, the Panchayat has two project proposals—Proposal 1 and Proposal 2. Proposal 1 will reconstruct an existing road between the village and a nearby city. This will potentially improve the quality and time of journey. This will require more material costs. Proposal 2 will build a super pond that can store more rain water (double than any standard pond) for more time (for 9 to 11 months). This will benefit the whole community in the present and future by providing better water preservation for drinking and farming. This project will require more man-power (i.e., labour costs) than material costs. The amount of fund already available can adequately cover either of the projects (i.e. only one of the project-proposals can be implemented).

Now look at the Table 1 below and consider four possible actions that person A could take. For each of the actions, please indicate whether you believe choosing that action is very socially inappropriate, somewhat socially inappropriate, somewhat socially appropriate, or very socially appropriate.

**Table 1**

	Possible action	<i>Very Socially Inappropriate</i> (1)	<i>Somewhat socially inappropriate</i> (2)	<i>Somewhat socially appropriate</i> (3)	<i>Very socially appropriate</i> (4)
1	Panchayat decided to implement the Proposal 1 in the Gram-sabha and actually implemented it in the following year.				
2	Panchayat decided to implement the Proposal 2 in the Gram-sabha and actually implemented it in the following year.				
3	Panchayat decided to implement the Proposal 2 in the Gram-sabha. But they eventually implemented the Proposal 1 in the following year.				
4	Panchayat decided to implement the Proposal 1 in the Gram-sabha. But they eventually implemented the Proposal 2 in the following year.				